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Development of a School Climate Walkthrough Assessment

Jesslynn Rocha Neves, Ph.D.

University of Connecticut, 2020

School climate measurement is an increasingly important component of data-driven school improvement efforts. The present study involved the development of the School Climate Walkthrough Assessment (SCWA), a measure for evaluating environmental indicators and oral student reports of school climate alongside the Georgia Elementary School Climate Survey (GESCS), a validated self-report survey of school climate. The SCWA is administered by an adult who rates features of the school environment and then selects a subset of students for a school climate interview. It is meant to provide a snapshot of the general school climate in conjunction with school climate data obtained via self-report and archival measures, as well as additional school data points.

Results of the present study provide preliminary support for a walkthrough tool that can be used alongside student self-report and outcome data for school climate monitoring. Findings particularly highlight the intersection of environmental variables and student perceptions in a cultural-ecological conception of school climate. Implications for practice, policy, and future directions of research are discussed.

Key words: school climate, measurement, school quality

Development of a School Climate Walkthrough Assessment

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B.S., Tufts University, 2014

M.Ed., Harvard University, 2015

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A Dissertation

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Requirements for the Degree of

Doctor of Philosophy

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Jesslynn Rocha Neves

2020

APPROVAL PAGE

Doctor of Philosophy Dissertation

Development of a School Climate Walkthrough Assessment

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DEDICATION

I dedicate this dissertation to my nephew, Jaice Neves, who was just a newborn when I started my graduate school career. You have grown to be a smart, curious, thoughtful, hilarious, and beautiful person. You have brought to life everything that I studied about growing, learning, playing, laughing, and loving. I know that you will reach your highest potential, and Tya will always be cheering you on. Thank you for teaching me to see the world through your eyes.

This work is also dedicated to every child from Cabo Verde to New Bedford. Thank you for being the origin and motivation in my pursuit of a career in education.

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Introduction to School Climate

School climate is a construct that refers to the structural, interpersonal and learning, aspects of a school environment, including norms, goals, values, interpersonal relationships, instructional practices, and organizational systems, as perceived by students, families, and school personnel (Lewis & Sugai, 1999; Cohen, McCabe, Michelli & Pickerall, 2009; Kuperminc, Leadbeater, Emmons, & Blatt, 1997; National School Climate Center, 2007). There is an established connection between school climate and critical student outcomes, such as academic achievement (Hoy & Hannum, 1997), high school graduation (Worrell & Hale, 2001), and social adjustment (Kuperminc et al., 1997). As a result, recent educational policies have included language that addresses the impact of school climate on student outcomes and the role of school climate data in school improvement efforts. For example, in 2014, the U.S. Department of Education funded the School Climate Transformation Grant, an opportunity that encourages state and local education agencies to develop, enhance, and expand systemic support for school improvement. The School Climate Transformation Grant is specifically geared towards increasing schools' capacity to implement empirically based, multi-tiered frameworks to improve student behavioral and learning outcomes (U.S. Department of Education, 2014). Given the increased demand for data-driven school improvement initiatives, school climate measurement is a growing area of interest for education stakeholders.

Academic Achievement

The connection between school climate and student academic performance is well-documented. Generally, a supportive school environment is associated with student habits that

promote academic success, including increased academic self-efficacy (McMahon, Wernsman, & Rose, 2009), school retention (Fan, Williams, & Corkin, 2011), and confidence in taking academic risks (Osher & Kendziora, 2010). Wang and Holcombe found that amongst 1,046 middle school students, grade point average was positively associated with students' perceived school participation, identification with their school community, and a sense of academic competence (Wang & Holcombe, 2010). Additionally, students in supportive school environments tend to experience fewer behavioral problems that interrupt academic work, such as absenteeism, suspension and expulsion (Crosnoe et al., 2004).

Consequently, positive school climate has been associated with higher student achievement outcomes. Euguene examined data from the U.S. National Educational Longitudinal Study to explore this relationship amongst 11,999 secondary school students; students with positive peer connections, greater school commitment and attachment, and higher perceived parental involvement were shown to have higher GPAs (Eugene, 2008). In a more recent study, researchers found that positive student perceptions of overall school climate, as measured by the California Healthy Kids Survey, were associated with higher GPA amongst 496,902 high school students (O'Malley, Voight, Renshaw, & Eklund, 2015). This relationship has also been observed at the elementary level. In a study of 1,023 elementary school students, Wang and colleagues found that for each 1-point increase in student-reported school climate rating, student GPA increased by nearly 1 grade point (Wang et al., 2014). The literature affirms that a positive school climate promotes academic success for students across grade levels.

Social Adjustment

Perceptions of school climate have also been connected to social and emotional student outcomes. Students' feeling of connectedness to educators, in particular, has been cited as one of the most important predictors of student academic success and psychological well-being across

grades, and especially for students approaching the middle school transition (Baker, 2006; Woolley & Bowen 2007; Pisani et al., 2013). Wang et al. (2014) found that lower perceptions of school climate were associated with increased reports of peer victimization in a sample of 1,023 fifth-grade students. Similar patterns of peer victimization and perceptions of climate are observed across grade levels (Klein, Cornell, & Konold, 2012; Wilson, 2004). In a survey of 27,604 middle school students, Lisi found that students who reported greater perceptions of school climate were more likely to report having at least one adult in the school who could support them with academic, personal, or family problems (Lisi, 2004). Quality peer relations have also been associated with positive perceptions of school climate. In a sample of 7,229 fifth, eighth, and eleventh graders, students who reported negative perceptions of school climate were more likely to report approving attitudes towards bullying and to be perpetrators of bullying (Gendron, Williams, & Guerra, 2011). Empirical evidence suggests that a positive school environment supports quality relationships between students and adults, and positive peer relations.

Developmental Transitions

Finally, a positive school climate may serve as a protective factor as students progress throughout the academic trajectory, especially in the transition from elementary to middle school. Over the elementary years, there is a general decline in academic performance, positive attitudes toward school, and prosocial behaviors that promote adjustment (Meraviglia, Becker, Rosenbluth, Sanchez, & Robertson, 2003; Gutman, Sameroff, & Cole, 2003). In the following transition to middle school, students are at increased risk for peer victimization (Gendron et al., 2011), negative attitudes toward school (Anderman & Maehr, 1994), and behavior problems (Roeser & Eccles, 1998; Wang & Dishion, 2011). Fortunately, students experience a more positive transition to middle school with greater adult and peer support in elementary school

(Waters, Lester, & Cross, 2014). In a sample of 3,462 elementary school students, feelings of safety, connectedness, and peer support were significant predictors of mental wellbeing at the end of elementary school, with school connectedness and peer support serving as the strongest protective factors against depression and anxiety, respectively (Waters et al., 2014). After the transition to middle school, feelings of safety and connectedness remained significant predictors of mental wellbeing for students (Lester & Cross, 2015). Thus, experiences of school climate at the elementary level serve as a foundation for success in subsequent years.

Taken together, studies on the impact of school climate on students highlight the important of school climate monitoring to promote positive academic, social, and emotional outcomes for students. In particular, early experiences of school climate set the stage for future school outcomes and elementary students are highly responsive to school climate interventions (Wang, Berry, & Swearer, 2013), pointing to the importance of early school climate evaluation and intervention.

School Climate in the Educational Landscape

Effective school climate improvement efforts are shaped by two overlapping components: school improvement standards and assessment (Cohen, McCabe, Michelli, & Pickeral, 2009). Each state develops standards for school improvement efforts and may choose to include school climate in their school development plan. The Every Student Succeeds Act (ESSA) (2015) sets forth guidelines and recommendations to support states in developing plans that incorporate indicators of school success beyond academic achievement. In terms of assessment, empirically based school climate measures should account for the aspects that shape school climate, and also represent the three major groups within the school community: students,

staff, and families (Cohen, at al., 2009). Both of these critical aspects of school improvement involve thorough measurement of school climate and effective use of school climate data.

Historical Role in School Accountability

Investigations of school climate emerged in the early 1900s when educators Perry and Dewey proposed that student performance could be enhanced by improving non-instructional factors such as principal leadership style, teacher collaboration and morale, and student engagement, citizenship, and connectedness (Perry, 1908; Dewey, 1938). Initial school-level experimentation led to formal studies of school climate that mirrored work in organizational psychology exploring productivity and morale. Commissioned by the U.S. Office of Education, Halpin and Croft were the first to systematically evaluate school organizational aspects. Halpin et al. developed the Organizational Climate Description Questionnaire (OCDQ), which consisted of 64 items assessing teacher and administrator behaviors, to examine the culture of 71 elementary schools across the United States. Results indicated that aspects of climate within schools were characterized by the openness of school leadership, satisfaction of educators, and initiative on the part of both teachers and administrators. An open climate was identified as more desirable, while closed climate indicated lack of behaviors conducive to positive climate (Halpin & Croft, 1963).

Subsequently, policymakers and researchers alike focused school-level socioeconomic data as a measure of school climate; the prevailing view during this era was that higher per-pupil expenditure was synonymous with positive school environments (as defined by educators) and thus higher student achievement (Johnson & Marcum, 1969; Spady, 1973). McDill et al. challenged this notion in a study of 20,345 students, 1,029 educators, and 20 principals from 20 schools. McDill et al.'s study was pivotal in that it incorporated the perspectives of students to

consider the climate of the school, and it directly compared school climate and educational outcomes rather than indirect indicators of school climate (e.g., average socioeconomic status of student body). School climate was defined by students' attitudes toward academic achievement, including value for knowledge, emotional support, social cohesion, and student recognition. Affirming prior research, results showed that school climate accounted for a significant, positive relationship between each of the six aspects of school climate and math achievement (McDill, Rigsby, & Meyers, 1969). More importantly, researchers found no direct relationship between school socioeconomic status and school climate, suggesting that school climate was a variable with its own impact on student performance that warranted separate investigation.

In a crucial study that further solidified the distinct role of school climate, Brookover and colleagues investigated the relationship between school climate, school-level variables (overall socioeconomic status, racial composition), and student academic achievement (state reading and math assessments) for 4th and 5th graders (N=8,029). They defined school climate as "a composite of variables as defined and experienced by this [school] group," including students' perceived academic futility, future and present expectations, school evaluations, teacher push, teacher norms, and academic norms (Brookover et al., 1978) Researchers found that all of these school climate variables were positive, statistically significant predictors of student achievement on state reading and math assessments; this also held true when adjusting for race and school socioeconomic status. This finding has since been the basis for numerous studies that have distinguished school climate as a key variable in school achievement (Haynes, Emmons & Ben Avie, 1997; Crosnoe, Johnson & Elder, 2004; MacNeal, Prater, & Busch, 2009), peer victimization (Kuperminc, Leadbetter & Blatt, 2001; Wang, Vaillancourt, Brittain, McDougall, Krygsman, Smith, & Hymel, 2014), social adjustment (Kuperminc et al., 1997; Way, Reddy & Rhodes, 2007).

Current Policy Influences

School climate has since maintained its place as a viable area of inquiry within in the educational literature. However, the Every Student Succeeds Act (ESSA) of 2015 is the first educational law to encourage measurement and accountability of holistic indicators of school success (e.g., school climate). Improving upon the No Child Left Behind Act of 2001, which emphasized the use of student outcome data, ESSA additionally acknowledges environmental school factors that influence student achievement, especially for students at high risk for academic failure. For example, ESSA requires monitoring of English proficiency for dual language learners, as well as academic achievement across demographic groups to target the achievement gap.

The U.S. Department of Education (U.S.D.O.E) has invested over $70 million dollars in grant money to incentivize states and districts to use indicators of "school quality or student success" in educational evaluation (U.S. Department of Education, 2016). For example, the National Technical Assistance Center on PBIS is supported by a grant from the U.S. Department of Education Office of Special Education Programs (OSEP). Positive Behavioral Intervention and Support (PBIS) is a rigorous, data-driven multi-tiered framework that is used to guide decision-making for school improvement efforts. (Sugai & Horner, 2015*).* Specifically, data on school indicators such as attendance and disciplinary referrals are examined to strategically decide which universal, targeted, or individual interventions should be implemented to support students. Data are continuously evaluated to monitor student response to interventions. It is advantageous to consider student perceptions of school climate in working to create environments that are responsive their needs, as student ratings of the school environment reflect their perceptions of available supports. School climate data can be used as an outcome measure

of the effectiveness of interventions and supports identified through the PBIS decision-making process. Alongside traditional data sources such as ODRs and attendance, school climate data enhances the capacity for informed decision-making in multi-tiered support system frameworks.

Cultural-Ecological Conception of School Climate

Comprehensive models of school climate encompass the relationship between the school environment, student characteristics, and student outcomes. The Cultural-Ecological Model of School Climate (CEMSC) frames school climate as a function of individual, family, school, and community factors and the bi-directional relationships between these variables. This conceptualization offers fuller appreciation of the school environment and student characteristics to understand needs of the school community (La Salle, Meyers, Varjas, Roach, 2015). Utilizing the CEMSC as a guiding framework, La Salle et al. (2015) explored the extent to which student versus school level variables may influence perceptions of school climate. Researchers found that individual factors such as gender and achievement accounted for 78% of the variability in school climate perceptions, while classroom- (class size, teacher experience) and school- level (school size, SES) variables accounted for an additional 13% and 6% of the variance, respectively. Voight, Hanson, O'Malley, & Adekanye (2015) also examined within-school differences in perceptions of school climate, as measured by the California Healthy Kids Survey, across racial/ethnic groups and how these differences vary as a function of school-level indicators (Voight, Hanson, O'Malley, & Adekanye, 2015). As with previous studies, researchers found that for student perceptions of safety, connectedness, and adult-student relationships, most of the variance (up to 86%) was explained by within-school rather than between-school factors; Black and Latinx students reported poorer perceptions of school climate in comparison to White students in racially diverse schools. However, in low-income schools,

ratings of school climate were generally low and there was no significant difference in ratings across racial/ethnic groups, suggesting some degree of influence by overall school socioeconomic level (Voight et al, 2015).

Insight about the influence of student and school level factors on perceptions of school climate is particularly relevant to school climate assessment and intervention. The literature suggests that individual-level factors impact perceptions of school climate to the greatest extent, indicating a need for targeted interventions that can be implemented for cultural subgroups (e.g., males, low achieving students, racial/ethnic subgroups). Individual perceptions are critical because personal experiences directly affect choices and behaviors, which are influenced by and influence the collective school atmosphere. For example, students from racial and ethnic groups that are disproportionately disciplined (i.e., Black, Latinx) experience greater negative adult feedback than their peers, which may decrease their motivation and likelihood to engage in positive behaviors (Scott, Gage, Hirn, & Han, 2019). This pattern feeds into a collective climate of both limited cultural acceptance and undesirable student behavior. Still, the influence of contextual variables is far from negligible. The significance of classroom level variables points to the classroom as a cultural microcosm that warrants its own intervention efforts. For example, citing the connection between teacher experience and classroom discipline found in their study, La Salle et al. (2015) suggests systemic interventions such as professional development and school-wide behavioral expectations and classroom-targeted interventions. The impact of school level variables (i.e., school diversity, SES) indicates a need for universal supports that promote positive climate for all students, especially in culturally and socioeconomically marginalized schools (Voight et al., 2015). Ultimately, perceptions of school climate are shaped by individual and systems level factors that can be targeted for intervention.

Influence of Student-Level Factors

Student-level variables include demographic characteristics such as gender, race, ethnicity, ability level, socioeconomic background, and more. Some consistent trends have emerged for students within similar demographic groups in terms of perceived school climate. For example, students who identify as girls tend to have higher perceptions of school climate in comparison to peers who identify as boys (Koth, et al., 2008; Verkuyten & Thijs, 2002; Kuperminc et al., 2001, 1997). There are also consistent patterns in perceptions of school climate across racial/ethnic groups. In the United States, White students tend to report higher perceptions of school climate in comparison to students of color (McNeely, Nonnemaker, & Blum, 2002; Bradshaw, Mitchell, & Leaf, 2010).

Students with disabilities also differ in perceptions of school climate when compared to their peers. La Salle et al. explored a large sample of middle school students to examine differences in perceptions of school climate, peer victimization, and mental health amongst students with and without Individualized Education Programs (IEPs). Students with IEPs reported significantly lower perceptions of school climate, and significantly higher rates of mental health problems and peer victimization in comparison to peers without IEPs (La Salle, George, McCoach, Polk, & Evanovich, 2018). Taken together, these studies highlight the importance of recognizing cultural differences to implement targeted initiatives that promote positive experiences of school climate for at-risk groups.

Influence of School-Level Variables

Contextual factors also play a role in shaping student perceptions of school climate. For example, school level (e.g., primary, secondary) appears to have an impact on student experiences of school climate. In elementary school, student perceptions of climate are the highest. Middle school students' perceptions of school climate tend to drop, and high school

students' perceptions tend to increase slightly or remain constant until graduation (Roeser & Eccles, 1998; Way, et al., 2007; Bear, Gaskins, Blank, & Chen, 2011). These differences have been attributed to changes in school culture as grade increases. Elementary schools tend to be smaller, more structured, and close-knit, and these factors have a number of benefits for students academically, socially, and emotionally (Lester & Cross, 2015). First, students remain in the same classroom or with the same peers for the majority of the day, which creates opportunities to develop strong relationships with their teacher and peers. Structured learning also offers students a familiar environment and consistent feedback and praise in their academic work. Finally, learning is much more explicit with attainable success in elementary school (Wigfield, Lutz, & Wagner, 2005). In contrast, secondary schools are larger, more departmentalized, and less personal for students (Roeser & Eccles, 1998). Further, adolescence brings developmental changes that affect self-esteem, academic motivation, and peer relationship, and adolescents are expected to engage in more abstract learning and demonstration of higher-order knowledge (Wigfield et al., 2005). To counteract the negative effects of these structural and developmental changes, middle and high school educators have endeavored to replicate the positive aspects of elementary learning in secondary settings. For example, learning communities aim to personalize the learning experience through a student cohort model with multidisciplinary teacher teams (Felner, Seitsinger, Brand, Burns, & Bolton, 2007). Teaching and learning teams allow students to develop rapport with peers in a consistent learning community. Further, through collaborative teaching, educators develop a unified approach to instruction, teacher-student relationships, and behavior management based on the dynamics of the cohort (Blum, 2005). In addition to replicating the consistent, small-group learning structure of elementary classrooms, learning communities address adolescent development by promoting continuity in

instructional practices and social interactions across the transition to primary to secondary school (Felner et el., 2007).

School-level demographics, such as racial ethnic or socioeconomic makeup, may also influence perceived school climate. Parris et al. examined school-level racial/ethnic diversity as it related to school climate in a sample of 309,327 middle school students, finding that students reported significantly lower perceptions of school climate in schools with greater racial and ethnic diversity (Parris, Rocha-Neves, La Salle, 2018). This relationship may be a function of school-level factors that are more likely to affect students of color; schools with a large concentration students of color tend to have less economic resources, fewer highly qualified teachers, and less access rigorous coursework (U.S. Department of Education Office for Civil Rights, 2015). These studies point to the ways in which the school as a system is influential in students' experiences of school climate, which has implications for broad-scale intervention. A cultural-ecological model of school climate serves as a foundation for effective measurement.

School Climate Measurement

Today, school climate measurement is a culmination of what has been learned about the multiple dimensions of school climate that exist in a cultural-ecological context. Anderson's seminal evaluation of school climate measurement revealed there is no single way to measure school climate, as schools are characterized by numerous environmental factors that are associated with student outcomes. Therefore, effective school climate measurement should account for the ecological, social, and situational factors that define the environment (Anderson, 1982). The three current approaches to school climate measurement embody this multifaceted approach (Table 1).

Table 1

Approaches to School Climate Measurement

Social Validation Data	Stakeholder perceptions, as measured by self-report instruments
Archival Data	Behavioral indicators for students and educators (e.g., attendance, discipline, activity engagement) that are collected and reviewed as outcome data in the long-term scope
Observation Data	Explicit educator and student actions across school contexts (e.g., classroom, cafeteria, hallways), as measured by observation

Note. Adapted from Sugai, Simonsen, Freeman, and La Salle (2016)

Social Validation Data and Measures

Social validation data refers to stakeholder perceptions of the school environment, (e.g., student, personnel, and parent), which are evaluated with self-report measures such as rating scales. One of the earliest comprehensive measures of school climate was the California School Climate and Safety Survey, developed by Furlong et al. (Furlong, Morrisson and Boles, 1991). This student survey (grades 5-12) is a customizable self-report measure that explores students health risks, assets, and behaviors, while the school staff survey focuses on the racial/ethnic achievement gap, staff working conditions, and special education (Pickerall, Evans, Hughes & Hutchinson, 2009). A more recent instrument is the Delaware School Climate Survey, which assesses six broad domains of school climate: Teacher-Student Relations, Student-Student Relations, Fairness of Rules, Student Conduct Problems, School Safety, and Liking of School. The Delaware School Climate Survey has demonstrated adequate technical properties when administered to elementary (grades 3-5), middle (grades 6-8), and high school students (grades 9-12) (Bear, Gaskins, Blank & Chen, 2009).

A widely used survey that is currently being integrated by the Department of Education is the Georgia School Climate Survey (GSCS), developed by La Salle et al. (La Salle, McIntosh, & Eliason, 2016). Rooted in the Cultural-Ecological Model of School Climate (CEMSC), the GSCS evaluates school climate as a multifaceted construct that includes the ecological, social,

and situational factors that define the school environment. It includes four surveys (elementary student, middle/high student, personnel, and parent/family surveys), in which stakeholders report the extent of their agreement with statements related to school climate and its subscales: school connectedness, structure for learning, school safety, physical environment, peer and adult relations, and parental involvement. The GSCS has demonstrated sound psychometric properties in its use across regional and demographic settings, and several states have integrated it within their system of school progress data collection (White, La Salle, Ashby and Meyers, 2014).

Archival Data

Archival school climate data refers to the school indicators that reflect student and educator outcomes. Traditionally, these indicators have included standardized test scores, office discipline referrals, attendance, dropout rates, etc. Student behaviors such as school attendance, dropout rates, disciplinary infractions, and peer victimization are tracked and reported annually by the National Center for Education Statistics. The National Assessment of Educational Progress (NAEP) has tracked key indicators of student academic achievement since the 1970s. The Nation's Report Card began in 1978 with a national database of reading and mathematics achievement scores for students in 4th, 8th, and 12th grade. Over time, NAEP has expanded from standardized test scores to student attitudes toward school; in 2009, NAEP began administering a student survey of views on learning in mathematics, reading, and writing. Monitoring these variables at the national level is a central component of school accountability processes and school improvement.

Archival data can also include indicators associated with individual school improvement programs. For example, in implementing school-wide positive behavioral expectations, indicators of student and staff participation in the behavioral system may serve as archival data sources (e.g., positive and negative behavior referrals, fidelity of staff implementation)

(Simonsen & Sugai, 2007). Although archival indicators represent student outcomes, they are also a measure of how systematic processes operate within a school and the assumptions underlying those processes. To illustrate, in systems of positive behavior support, inequities may be evident in the disproportionality of office discipline referrals or positive behavior referrals by demographic group (Sugai et al., 2012). Black and Latinx students are traditionally disciplined at much higher rates than their demographic counterparts, and these differences may persist when PBIS is implemented without fidelity (McIntosh, Gion, & Eoin, 2018). Therefore, archival school data is best understood from multiple vantage points (disaggregated by demographic group) and with additional data sources (student reports of school climate). In light of the present example, schools may elect to examine office discipline referrals by racial and gender groups alongside student reported perceptions of cultural acceptance and fairness on school climate surveys. The purpose of archival data is to evaluate student outcomes in relation to school improvement efforts, but information on educator behaviors and student feedback are also key to understanding intervention efficacy.

Observation Data

School climate data collected via observation illustrate the individual actions and environmental features of a school that contribute to the overall climate. Observation data captures the essence of ecologically based school climate assessment by acknowledging the school as a cultural context with features that affect student experiences of school climate. In turn, perceptions of school climate shape the observed setting and culture (e.g., perceived school pride and observed cleanliness). Thus, the relationships between social validation, archival, and observation data are dynamic and bi-directional.

To illustrate, a school's data may indicate a high number of suspensions related to peer conflict and aggression. School climate data may show that student perceptions of safety are

more negative than other aspects of school climate. Both data sources indicate a need for increased practices to promote safe environments by increasing positive student interactions. However, what are the student and educator actions, and environmental characteristics that relate to these outcomes? Observed indicators may include adult surveillance in the hallway between classes, quality of peer interactions, or posted behavioral expectations. The observational data shows the way safety features in the environment promote or inhibit students' perceived safety and subsequent outcomes (e.g., discipline data). Together, the three data sources support the identification of school climate strengths and weaknesses, as well as specific initiatives and interventions that may be implemented to address support school improvement efforts.

One widely used rating scale, the Family Friendly Walkthrough Checklist, is an evaluation tool that helps educators assess how inviting their school appears to community members and families (New Jersey State PIRC, 2011). This instrument focuses on three broad domains of assessment: (1) Welcoming Environment, (2) Policies & Practices to Engage Parents, and (3) Home-School Communication. The Family Friendly Walkthrough Checklist is a free tool that can provide meaningful information about school aspects that appeal to outside community members and families (New Jersey State PIRC, 2011). Another tool, the Tiered Fidelity Inventory (TFI), is a validated PBIS measure of fidelity of implementation in a schoolwide behavioral support framework. Its purpose is to measure the extent to which school personnel are applying the practices of a schoolwide positive behavioral program (Algozzine, Barrett, Eber, George, Horner, Lewis, Putnam, Swain-Bradway, McIntosh, & Sugai, 2014). Raters are given a checklist of target practices, and use school documents and resources (e.g., student handbook), as well as a school "walkthrough" to rate their observation of these practices as Fully Implemented, Partially Implemented, or Not Implemented. The School-Wide Evaluation Tool (SET), like the TFI, is used to evaluate the critical features of school wide PBIS. The SET is more expansive

than the TFI, including the collection and assessment of permanent products (discipline handbook, school improvement plan) and behavioral data, as well as interviews for administrators, teachers and students (Sugai, Lewis-Palmer, Todd & Horner, 2005).

There remains a limited availability of tools to assess environmental indicators of school climate. The described walkthrough tools do not evaluate the student- and staff- centered school characteristics that are essential to school climate as a construct. In a review of school climate assessment methods across the United States, Cohen et al. (2009) found that seven states relied on observational checklists as the school climate assessment standard. However, all of the checklists were created internally, and were not criterion referenced or empirically supported. This is an area of growth within the school climate measurement literature.

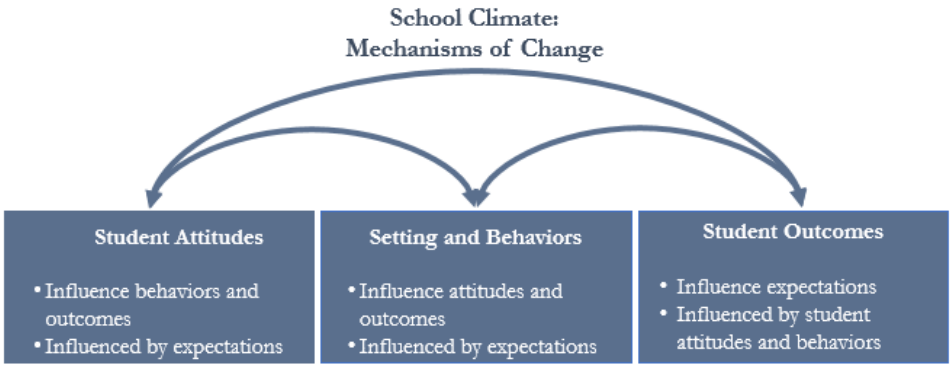
A Data System of Checks and Balances

The purpose of evaluating social validation, archival, and observational school climate data is to understand how each influences the other and contributes to the overall school climate. That is, what does each data source capture, and how does it relate to school climate improvement efforts? Multi-informed assessment offers information on the bi-directional influences between subjective experiences, the features and behaviors that characterize the environment, and student outcomes. Perceptions of school climate provide insight into students' experiences in and attitudes toward the environment, which influence the ways in which they interact with and shape the environment. Similarly, the physical environment and students' behaviors shape their experiences and resulting attitudes toward the climate. The outcomes of these attitudes and behaviors are captured by archival data, which in turn influence the academic and behavioral expectations that affect their behavior and attitudes. The multiple relationships

between these three areas of school climate are depicted in Figure 1. Considering each source helps to balance expenditure of energy and resources on different intervention and initiatives.

Figure 1

Mechanisms of Change within School Climate



CHAPTER II: STUDY PURPOSE AND RESEARCH QUESTIONS

Purpose

The present study involves development of a school climate measurement tool that (a) is used to collect reports of school climate from a subset of students (b) can be used as a walkthrough tool to assess environmental indicators of school climate, and (c) combines these approaches with additional school level data to support a cultural-ecological framing of school climate. The School Climate Walkthrough Assessment (SCWA) is meant to provide a snapshot of student reports of school climate to anticipate results of biannual GESCS administrations. Further, the SCWA explores environmental features that contextualize student experiences of the overall school climate. Both of these data sources may serve to support school improvement plans that are in place based on ongoing assessments of school quality.

The SCWA is meant to be contribute to the triad of social-validation, archival, and observational data for a balanced approach to school climate assessment and intervention. Thus,

the present study focused on evaluating the initial psychometric properties of SCWA components, and the relationship between data collected with the SCWA and with a validated self-report measure of school climate, the GESCS.

Georgia Elementary School Climate Survey (GESCS)

The Georgia Elementary School Climate Survey (GESCS) was derived from the Georgia Brief School Climate Inventory (GaBSCI) (Appendix A), a psychometrically sound, brief measure of school climate in which students rate items using a four point Likert scale (White, La Salle, Ashby & Meyers, 2014). The Georgia Elementary School Climate Survey (GESCS), is a validated measure of school climate in which elementary students rate items using a four-point Likert scale (La Salle, Zabek, & Meyers, 2016). The GESCS and GaBSCI are used nationally in schools as an efficient, short instrument for monitoring student perceptions of school climate; they are also used as statewide school climate measures in Georgia. Overall, the GaBSCI is used in over 100 schools across 19 states. The GESCS/GaBSCI were used as models to guide creation of the SCWA given its brevity, intended use, and psychometric properties.

School Climate Walkthrough Assessment (SCWA)

The SCWA was developed to be used alongside the GESCS when examining perceptions of school climate, particularly for intermittent monitoring between GESCS administrations. The SCWA is intended to be administered by a rater who is not part of the target school community (e.g., members of district-level school improvement teams (PBIS, cultural responsiveness). There were two objectives in this validity study. First, the researcher developed and piloted an instrument to assess environmental indicators of school climate and collect oral self-reports of school climate from a sample of students in a school. Then, psychometric properties of the

instrument, including construct validity, factor structure, reliability, and convergent validity with the GESCS, were evaluated.

The SCWA is comprised of an environmental observation and student interview. The environmental observation scale (EOS) is focused on observed environmental indicators representing the five broad areas that define school climate: (1) Norms, Goals and Values, (2) Relationships, (3) Safety, (4) Learning, and (5) Organizational Structure. Data collectors examined evidence of these indicators in a designated school environment (e.g., hallway), and provide ratings on a 4-point Likert scale. The student interview is focused on gathering verbal student reports of school climate that are aligned with written self-report responses on the school climate surveys. The interview included corresponding items to the GESCS that asked students to list examples related to the item (Examples), then provide a verbal rating of the item as on the GESCS (Ratings). The interview was administered by each data collector to students who reported responses on a 4-point Likert scale, as with the GESCS. Thus, the SCWA was comprised of three parts: Environmental 0bservation Scale (EOS), Student Interview-Examples (SI-E), and Student Interview-Ratings (SI-R).

Target Population

Researchers targeted schools that previously accessed the GSCS through PBIS Assessments, a free resource available through the PBIS OSEP Technical Assistance Center. The PBIS OSEP Technical Assistance Center has adopted the GSCS as a resource for schools to be able to evaluate school climate and support school improvement efforts, specifically within the PBIS framework. Researchers also targeted schools that were part of the Massachusetts Positive Behavioral Interventions and Supports Academy (MA PBIS Academy), a 3-year, cohort style training and support structure for schools and districts. The support includes a leadership team,

training, on-site technical assistance, data support, and ongoing professional development. Convenience sampling was an element of recruiting, as the Massachusetts Department of Elementary and Secondary Education has partnered with the Center for Behavioral Education and Research (CBER) at the University of Connecticut to develop the MAPBIS Academy. For the selection of individual student participants within schools, random sampling was used.

Demographics

Research has demonstrated differences in perceptions of school climate across demographic groups, such as gender, grade, race, and ethnicity (White et al., 2014), as well as with respect to school-level characteristics (Parris et al., 2018). To further evaluate the technical properties of the SCWA, differences in experiences of school climate based on demographics were evaluated. Demographic data were collected from students on the student interview and GESCS to facilitate these comparisons, and school administrators were asked to provide information on the overall school demographics.

Research Questions

Research Question 1

Does the Environmental Observation Scale (EOS) demonstrate adequate construct validity?

RQ1A Given an Exploratory Factor Analysis (EFA), what EOS items are retained in a single-factor model?

RQ1B. Does the single-factor model of Environmental Observation Scale represent adequate reliability of ratings?

RQ1C. Is there correlation between environmental observation rating and other school level variables explored in this study (SES and diversity)?

Research Question 2

Do the Student Interview scales demonstrate adequate construct validity based on the established factor structure of the Georgia Elementary School Climate Survey?

RQ2A. Do the SI-Examples items represent a single-factor model with adequate fit and reliability of ratings?

RQ2B. Do the SI-Ratings items represent a single-factor model with adequate fit and reliability of ratings?

Research Question 3

Comparing data collected with the Student Interview and GESCS, is there variance in perceptions of school climate?

RQ3A. To what extent do individual (student) vs. school level variables account for variance in student perceptions of school climate, as measured by the Student Interview Ratings?

RQ3B. To what extent do individual (student) vs. school level variables account for variance in student perceptions of school climate, as measured by the GESCS?

CHAPTER III: METHODOLOGY

Setting & Participants

Study procedures were approved by the University of Connecticut Institutional Review Board. This study included 11 public elementary schools from 4 school districts throughout Connecticut and Massachusetts. Table 2 summarizes school-level demographic information. Data collectors from the University of Connecticut visited each school in pairs or trios to conduct the walkthrough assessment, resulting in a total of 25 environmental observations and 165 student interviews. Student interview participants included a total of 165 students; only 4th graders were interviewed because some elementary schools were split into upper and lower grades, and 4th grade was the only consistent grade present in schools in the sample. Results from

the GESCS included responses from 1,055 students in grades 3-5 across 9 of the 11 schools where the walkthrough assessment was administered. Table 3 summarizes student interview participant and GESCS student participant demographic information.

Table 2

School-Level Demographic Characteristics

	School ID										
	101	102	201	202	301	302	303	304	401	402	403
Student Population (N)	421	431	332	304	336	445	442	372	703	239	254
Free/Reduced Lunch	68%	100%	54%	52%	65%	25%	25%	20%	100%	100%	100%
Gender											
Girls	49%	51%	55%	45%	50%	44%	52%	53%	44%	51%	43%
Boys	51%	49%	45%	55%	50%	56%	48%	47%	56%	48%	57%
Third Gender/Nonbinary	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Race/Ethnicity											
American Indian/Alaskan Native	0%	2%	0%	.1%	0%	0%	0%	<.1%	1%	0%	1%
Asian	1%	.01%	4%	.3%	7%	.1%	2%	13%	1%	2%	3%
Black/African American	1%	.01%	10%	16%	39%	15%	16%	18%	10%	3%	13%
Hispanic/Latinx	61%	56%	28%	13%	34%	19%	11%	11%	5%	18%	31%
Native Hawaiian/Pacific Islander	0%	2%	0%	0%	0%	0%	.1%	0%	<1%	0%	1%
White or Caucasian	35%	38%	77%	80%	26%	54%	64%	52%	82%	73%	51%

Table 3

Student Demographic Characteristics

	Interview Participants (N=165)		GESCS Participants (N=1029)	
	N	*%*	*N*	*%*
Gender				
Girls	72	55	389	49
Boys	90	44	365	46
Other	3	1	43	5
Data unavailable			258	
Race/Ethnicity				
American Indian/Alaskan Native	6	4	17	2
Asian	2	1	22	3
Black/African American	18	11	89	11
Hispanic/Latinx	34	21	248	31
Native Hawaiian/Pacific Islander	1	.6	7	1
White or Caucasian	87	53	410	52
Two or more races	48	29	248	31
Data unavailable			262	

Measures

Georgia Elementary School Climate Survey

The Georgia Elementary School Climate Survey (GESCS) was used as a validated self-report measure of school climate. The GESCS is a psychometrically sound measure of school climate in which elementary students rate items using a four-point Likert scale (La Salle, Zabek, & Meyers, 2016). The GESCS also supports a single-factor model of school climate comprised of 11 items (La Salle, Zabek & Meyers, 2016). In the present study, the GESCS yielded a scale reliability of .819.

Demographics

School administrators provided school level demographics including school size (number of students), percentage of students receiving free/reduced lunch, and percentage of students in each grade (3-5), gender (boy, girl, other) and racial/ethnic category (Asian, American Indian or Alaskan Native, Black or African American, Native Hawaiian or Other Pacific Islander, White; Latino/Not Latino) (Table 2). Student interview participants were asked to report gender (Male, Female, Prefer Not to Say) and race/ethnicity (Asian, American Indian or Alaskan Native, Black or African American, Native Hawaiian or Other Pacific Islander, White; Latino/Not Latino). GESCS participants were asked to report grade (3-5), gender (Male, Female, Prefer Not to Say) and race/ethnicity (Asian, American Indian or Alaskan Native, Black or African American, Native Hawaiian or Other Pacific Islander, White; Latino/Not Latino) (Table 3).

Procedures

Data Collector Recruiting and Training

UConn graduate students in the Neag School of Education were recruited to administer the SCWA via postings from the School Psychology Newsletter. Neag graduate students were

ideal, qualified participants given that they had taken coursework or had research experience related to educational assessment methods.

Participating data collectors were required to complete an in-person training module on how to administer the SCWA (approximately half an hour). At the training, the researcher described the purpose of the study, training, and the role of the data collector. Training content was delivered by the student investigator (Table 4) using an administration protocol and demonstration of the walkthrough (Appendix G). Ultimately, two graduate students were recruited for participation in data collection, resulting in a total of 3 data collectors (including the student investigator).

Table 4

Data Collector Training Content

Overview	SCWA Purpose Components
Conducting the Environmental Observation	Administration Procedure and Timing Designated Spaces Using examples and non-examples
Conducting the Student Interview	Random Selection of Students Timing Obtaining Consent Demographic Questions Disqualifiers

School Recruiting

Public elementary schools (K-6) were recruited via convenience sampling from the database of schools that have accessed the Georgia School Climate Surveys (GSCS). School administrators received a recruiting letter for the study via e-mail that described the purpose of the study, required resources, study timeline and overview, IRB information, and exclusionary

criteria. Schools confirmed their participation by completing and returning the School Agreement Forms (SAF) (Appendix C) to the researcher; the SAF included the purpose and timeline of the study, school responsibilities, and contact information for the student investigator and UConn IRB. Next, administrators were provided the Teacher Information Letters (Appendix D), Parent/Guardian Information/Opt-Out Forms (Appendix E) and Student Information Letters (Appendix F) to distribute to their school community. These forms outlined study procedures and participant rights to students, parents/guardians, and teachers. Signed parent opt-out forms were required to be returned by the day of data collection in order to exclude a child from participating in the study.

Sample size. Structural equation modeling techniques at the overall school level were used. Given that SEM is a large-sample statistical technique, a minimum of N=200 data points is recommended (Kline, 2016). Thus, 200 was the target number of student interviews to be completed, with 15 students interviewed in each school to capture a representative student report of the school climate. Given that this was a validation study, the researcher aimed to administer the walkthrough instrument in several schools. Considering potential study attrition, the target number of schools was 15 (15 student interview/school x 15 schools = 225 student data points). Each rater was intended to administer the scale to 5-8 students in each school to facilitate interrater reliability calculations.

Instrument Development

The SCWA (Appendix B*)* was developed in the summer/fall of 2018. The first part of the SCWA was comprised of 6 items addressing the indicators of school climate that represent the five broad areas that define school climate: (1) Norms, Goals and Values, (2) Relationships, (3) Safety, (4) Learning and (5) Organizational Structure, as observed in a designated school setting (e.g., hallway, classroom) (Table 5). Each item required data collectors to consider an aspect of

the school environment within the aforementioned domains and rate the number of examples of the aspect observed. Examples and non-examples of the target features were included for each EOS item. Response options were on a 4-point scale and included (1) none observed, (2) 1-2 examples observed, (3) 3 examples observed, and (4) more than 3 examples observed. The final item on the EO, which inquired about the total number of positive interactions witnessed throughout the entire observation, was rated using a distinct scale: (1) 0-2 observed, (2) 3-6 observed, (3) 7-10 examples observed, and (4) more than 10 examples observed.

Table 5

Environmental Observation Items

Item	Domain
1. Emblems of school pride are visible.	Norms, Goals, & Values
2. Physical environment is conducive to school safety.	Safety
3. Safety resources are clearly visible in separate locations.	Safety
4. Student academic work/evidence of student achievement is displayed.	Learning
5. School leadership, such as principals and administrators, are visible.	Organizational Leaderships
6. THROUGHOUT THE ENTIRE ENVIRONMENTAL OBSERVATION, how many positive interactions did you observe? - Educators (e.g., principals, teachers, school staff) initiate positive interactions with students.	Relationships

The Student interview (SI) portion of the SCWA included an oral interview for a subset of students, in which students were asked to provide examples and ratings of school climate that directly corresponded to self-report questions posed in the GESCS (Table 4). For example, the GESCS asks students to rate the following statement: “I know an adult that I can talk with if I need help.” For the SCWA, the student was asked to list teacher(s) they could talk with if they needed help (SI-E), and then rate whether they felt they knew such a teacher *never, sometimes, often, or always* (SI-R). Thus, the interview was comprised of 11 pairs of SI-E and SI-R items that were derived from corresponding GESCS items, as exemplified below (Table 6).

Table 6

Corresponding GESCS and Student Interview Items

GESCS Item Scale: 1=always, 2=often, 3=sometimes, 4=never	Student Oral Example (SI-E) Scale: 1=0 examples, 2=1 example, 3=2 examples, 4=3 or more examples	Student Oral Rating (SOR) Scale: 1=always, 2=often, 3=sometimes, 4=never
1. I like school.	What do you like about your school? Name three things.	Do you feel you like school always, often, sometimes, or never?
2. I feel like I do well in school.	What makes you feel like you do well in school?	Do you feel you do well in school always, often, sometimes, or never?
3. My school wants me to do well.	What way or ways do your teachers make you feel like they want you to do well?	Do you feel your teachers want you to do well always, often, sometimes, or never?
4. My school has clear rules for behavior.	Name three rules for behavior you are expected to follow at school.	Do you feel that school rules for behavior are clear always, often, sometimes, or never?
5. I feel safe at school.	What rules or people make you feel safe at school?	Do you feel safe at school always, often, sometimes, or never?
6. Teachers treat me with respect.	In what way or ways do your teachers treat you with respect?	Do you feel teachers at school treat you with respect always, sometimes, often, or never?
7. Good behavior is noticed at my school.	In the past week, how many times has an adult at school noticed your good behavior?	Do you feel good behavior is noticed at your school always, often, sometimes, or never?
8. Students in my class behave so that teachers can teach.	Name three rules for behavior that your classmates usually follow in class.	Do you feel classmates follow rules for behavior in class always, often, sometimes, or never?
9. I get along with other students.	In what ways do **you** show that you want to get along with other students at school?	Do you feel you get along with other students at school always, often, sometimes, or never?
10. Students treat each other well.	In what ways do students treat each other well at school?	Do you feel students treat each other well at school always, often, sometimes, or never?
11. There is an adult at my school who will help me if I need it.	Name an adult or adults who will help you if you need it.	Do you feel there is an adult who will help you if you need it at school always, often, sometimes, or never?

Data Collection

Each data collector was issued an iPad from the Educational Psychology Department to administer the SCWA. Data collectors completed the *SCWA* via a secure, on-line portal in UConn Qualtrics. Qualtrics uses Transport Layer Security (TLS) encryption (also known as SSLv3.1) for all internet transmitted data. A "Qualtrics Offline Surveys" application was used to administer the walkthrough tool and secure the data regardless of internet connectivity.

The SCWA was administered in May through June of 2019. Data collection occurred during the spring window of administration of the GESCS. The School Climate Survey Administration Manual recommends that when data are collected bi-annually (fall and spring), the first data collection should take place within the first month of the school year (La Salle, McIntosh, & Eliason, 2016). Upon arrival at the school, data collectors provided colored lanyards to the principal to be distributed to 4th grade students. Students received a purple lanyard if their parents signed and returned an opt-out form, or if the student had a cognitive, social, or linguistic ability that would not allow them to complete an oral interview. The purple lanyard signaled to data collectors that they should not be selected for an interview.

Environmental observations were completed in the hallway area surrounding classrooms as designated by each principal, while classes were in session and transitioning to lunch; the observation area was confined to the specific areas surrounding the classrooms (e.g., hallway and entryway of 4th grade hallway). Data collectors at each site completed the observation simultaneously after opening the walkthrough assessment and selecting the school name. Each EOS question was answered in sequence by (1) reading the question, (2) walking through the setting for approximately 1 minute, considering the criteria of that specific item, (3) tallying the number of examples observed, and (4) marking the appropriate response. To illustrate, if a data collector was considering a question regarding safety resources visible in the setting, they only

considered those aspects of the environment when observing to rate this item. For each item, data collectors had the option to record notes about additional examples that were not listed in the EOS if they were observed for the item (Table 7). Data collectors repeated this process for all 6 items. In total, the EOS took approximately 10 minutes to complete.

Table 7

Environmental Observation Notes

Item	Additional examples observed
1. Emblems of school pride are visible.	• Mural
2. Educators (e.g., principals, teachers, school staff) initiate positive interactions with students.	• Redirection • No opportunity to observe
3. Physical environment is conducive to school safety.	• Cleanliness • Ladders, chairs, loose tiles
4. Safety resources are clearly visible in separate locations.	• Food allergy signs • Automatic External Defibrillator (AED) • Accessible Door (automatic open function)

Data collectors then transitioned to the student interview portion. Interviews took place in the cafeteria and playground during lunch and recess. At sites with three data collectors, each interviewed 5 students. At sites with two data collectors, one interviewed 7 students and the other interviewed 8. Data collectors chose only students who were (1) wearing a lanyard that was not purple, and (2) not part of a group of students from which the data collector had already selected (e.g., group of friends). The data collector first selected a student and used the introduction script to obtain verbal consent to complete the interview (Appendix G). If the student assented to participate in the interview, the student was given or shown the iPad to complete demographic questions independently (e.g., the data collector showed the student the

screen and asks them to answer the demographic questions). Then, the data collector asked the student each self-report question and recorded the response.

If a student (1) did not provide verbal consent, (2) appeared to have significant difficulty in answering the questions fluidly, or (3) asked to discontinue the survey, the interviewer thanked the student for their time and discontinued the survey. Responses from students who did not fully complete the interview were not recorded (the rater began the survey again with a different student). When the interview exceeded the time allotted for lunch or recess, the interviewer completed their present interview and escorted the student to class.

On the Oral Examples portion of the student interview, students often asked data collectors to clarify items or appeared to misunderstand what they were being asked (e.g., lengthy response time, providing irrelevant answers). In these cases, data collectors paraphrased the question and asked the student if they understood to ensure the student knew what they were being asked. Paraphrases used comparable synonyms for words, or elaborated on the types of circumstances/resources that the item was inquiring about. Data collectors reported paraphrases to the student investigator at the end of each data collection session, and they are summarized below in Table 8. Each student interview took approximately 5-7 minutes to complete.

Table 8

Student Interview Examples Item Paraphrases

Student Interview- Example Item(s)	Item Paraphrase (s)
1. What do you like about your school? Name three things. (allow response)	N/A
2. What makes you feel like you do well in school? (allow response)	a. When do you feel like you're successful in school?
3. What way or ways do your teachers make you feel like they want you to do well? (allow response)	a. How do your teachers show you they want you to do well/succeed?

4. Name three rules for behavior you are expected to follow at school. (allow response)	a. What are three rules you are supposed to follow when you're here?
5. What rules or people make you feel safe at school? (allow response)	a. What rules, people, or drills make you feel safe at school? b. What makes you feel safe when you're at school?
6. In what way or ways do your teachers treat you with respect? (allow response)	a. How do your teachers show you respect?
7. In the past week, how many times has an adult at school noticed your good behavior? (allow response)	a. Follow-up: No times, a couple of times, three times, more than that?
8. Name three rules for behavior that your classmates usually follow in class. (allow response)	a. What are three rules your classmates are really good at following when you're in class? b. If provides rules commonly broken: Which rules do they **not** break in class?
9. In what ways do **you** show that you want to get along with other students at school?	a. How do you show other students you want to get along with them?
10. In what ways do students treat each other well at school?	a. What do you see others doing to show they want to get along with students? b. How do other students treat each other well at school?
11. Name an adult or adults who will help you if you need it.	N/A

Data collectors immediately uploaded data to Qualtrics once they had access to internet; there was a mandatory 24-hour window for data collectors to upload data after a walkthrough assessment. All downloaded data was stored on an encrypted device in a password protected file. The student researcher monitored data input daily to ensure the surveys had been recorded in Qualtrics. Upon completion of data collection, data collectors returned the iPads to the student investigator. The student researcher deleted all study-related data from the iPad before returning them to the Educational Psychology Department.

In total, 9 of the 11 participating schools administered the GESCS. In 5 schools, the GESCS was administered electronically via Qualtrics; data files were downloaded directly from Qualtrics and saved to an encrypted device in a password protected file. For the remaining 4

schools, data were received through the OSEP Technical Assistance Center on PBIS, Educational and Community Supports in a single, password protected data file with no individual identifying information.

To protect the anonymity of the data, each school was coded with a 3-digit numerical sequence beginning with 1 (e.g., School 101, School 102). Upon receipt of the data, each data point from the GESCS and SCWA was labeled with the school's unique code. The student investigator maintained a key with the school codes and overall school demographics in a password protected document on an encrypted device.

Data Analysis

Initial analyses were conducted in SPSS v.24. Descriptive statistics of the sample were evaluated (frequencies, means, standard deviations). Means for overall school climate rating and individual items were calculated for student responses on the SI-E, SI-R, and GESCS. The overall school climate rating for each scale was calculated by summing the individual items and dividing them by the total number of items ((Item 1+Item 2+…Item 11)/11). For each scale, correlation between items and reliability (Cronbach's alpha) were calculated to examine scale reliability (**RQ1, RQ2**). Ratios were created for school level variables socioeconomic status and diversity, where SES was represented by the proportion of low-income students (students who receive free or reduced lunch) (M=.58, SD=.27) and school diversity was represented by the proportion of students of color enrolled in the school (M=.46, SD=.19). Main effects of data collector on Student Interview responses were evaluated to determine whether data collectors affected student interview responses (significance testing at the .05 level). Finally, correlations among variables were also evaluated to assess potential linear dependency between variables

explored in this study (significance testing at the .05 level; .0-.3 weak correlation, .4-.5 moderate correlation, >.6 strong correlation).

Structural equation modeling procedures were conducted in Mplus v. 7.3 (Muthén & Muthén, 1998–2015) to answer **RQ1**, **RQ2**, and **RQ3**. For all MPlus analyses, school was used as a clustering variable in the model to account for the nested nature of the data (e.g., students nested within schools), using weighted least square parameter estimates with a diagonal weight matrix and standard errors with mean- and variance-adjusted chi-square test statistics (WLSMV estimator; Muthén & Muthén, 1998–2015) due to the categorical nature of student-reported school climate data (i.e., responses on a four-point Likert scale for the GESCS, SOE, SOR).

Exploratory factor analysis (EFA) was conducted to explore whether the items of the EOS measured a unified latent construct, and to determine the extent to which the items loaded on the latent construct (**RQ1**). (Furr & Bacharach, 2014). Given the ordinal nature of the item response scales, a modified version of exploratory factor analysis was conducted using a polychoric correlation matrix. Initially, Categorical Principle Component Analysis (CATPCA) (Meulman, Heiser, & SPSS, 1999) was conducted in SPSS v.24 to determine the appropriate number of factors to extract as part of the EFA. CATPCA is used for optimal scaling transformations when working with categorical data (Meulman, Van der Kooij, & Heiser, 2004). EOS Cronbach's coefficient alpha was evaluated using SPSS v. 24.

Confirmatory factor analysis (CFA) was utilized to confirm the EOS factor structure after EFA was completed (**RQ1**), and to confirm the factor analysis of the SI-E and SI-R scales of the Student Interview based on the factor structure of the GESCS (**RQ2**). CFA was deemed appropriate given that each of the Student Interview scales were derived from the structure, items, and underlying theories of the GESCS (e.g., a priori hypothesis regarding factor structure) (Kline, 2016). The SI-E and SI-R models each included eleven school climate items represented

by one overall school climate factor. A chi-square significance test was used to assess fit in addition to three common fit indices: comparative fit index (CFI), Tucker–Lewis index (TLI), and root mean square error of approximation (RMSEA). The CFI and TLI are measures of the incremental fit index to assess relative improvement in the fit of the model relative to the baseline model. Ideally, CFI and TLI should be at or above .90 (Hu & Bentler, 1999). The RMSEA is an absolute fit index that evaluates the relationship between the observed data and the data pattern that would be expected based on the estimated model. RMSEA values less than .08 are generally considered indicative of adequate model fit (Hu & Bentler, 1999; Pendergast, Von der Embse, Kilgus, & Eklund, 2017).

Finally, an unconditional model (without restraints and specifications) of the GESCS was tested in MPlus to determine the within- and between-level variance in ratings of overall school climate and scale items (**RQ3**) (Raudenbush & Bryk, 2002 as cited in Asparouhov & Muthen, 2006). Intraclass correlations (ICC) were calculated by dividing the proportion of variance between groups by the proportion of variance within groups, resulting in the proportion of variance between schools (Jones, 2020). The same steps were carried out for the SI-Ratings scale (**RQ3**).

CHAPTER IV: RESULTS

Descriptive Statistics

Preliminary data analysis included calculating means for the individual items, creating overall school climate scores for the Student interview (SI-E and SI-R) and Georgia Elementary School Climate Survey, calculating SES and diversity ratios for schools, and evaluating the effects of data collector on SCWA ratings. Correlations among study variables are available in Table 9.

Table 9

Correlations Among Variables

Variable	1	2	3	4	5
1. Mean GESCS Rating	-	.10**	.02	-.32**	-.24**
2. School Mean on Student Examples			-.65**	-.07*	.11**
3. School Mean on Student Ratings				-.01	-.29**
4. School SES					.41**
5. School Diversity					-

*significant at .05 level

**significant at .01 level

Student Interview

Mean ratings for the SI-E (M=2.80, SD=.39) and SI-R (M=3.3, SD=.45) are summarized in Table 10.

Table 10

Mean Ratings: Student Interview

	Mean (M)	Standard Deviation (SD)
SI-Examples Score	**2.80**	**.39**
SI- Examples Items		
1. What do you like about your school? Name three things.	3.59	.70
2. What makes you feel like you do well in school?	2.19	.66
3. What way or ways do your teachers make you feel like they want you to do well?	2.29	.71
4. Name three rules for behavior you are expected to follow at school.	3.72	.56
5. What rules or people make you feel safe at school?	2.50	.75
6. In what way or ways do your teachers treat you with respect?	2.34	.74
7. In the past week, how many times has an adult at school noticed your good behavior?	3.27	.98

8. Name three rules for behavior that your classmates usually follow in class.	3.00	1.04
9. In what ways do **you** show that you want to get along with other students at school?	2.49	.74
10. In what ways do students treat each other well at school?	2.41	.80
11. Name an adult or adults who will help you if you need it.	3.09	.89
SI-Ratings Score	**3.30**	**.41**
SI- Ratings Items		
1. Do you feel you like school always, often, sometimes, or never?	2.95	.90
2. Do you feel you do well in school always, often, sometimes, or never?	3.16	.78
3. Do you feel your teachers want you to do well always, often, sometimes, or never?	3.91	.36
4. Do you feel that school rules for behavior are clear always, often, sometimes, or never?	3.47	.78
5. Do you feel safe at school always, often, sometimes, or never?	3.59	.67
6. Do you feel teachers at school treat you with respect always, sometimes, often, or never?	3.73	.60
7. Do you feel good behavior is noticed at your school always, often, sometimes, or never?	3.11	.82
8. Do you feel classmates follow rules for behavior in class always, often, sometimes, or never?	2.67	.73
9. Do you feel you get along with other students at school always, often, sometimes, or never?	3.05	.81
10. Do you feel students treat each other well at school always, often, sometimes, or never?	2.95	.78
11. Do you feel there is an adult who will help you if you need it at school always, often, sometimes, or never?	3.66	.66

Georgia Elementary School Climate Survey

Mean GESCS ratings of overall school climate (M=3.1, SD=.50) and individual items are summarized in Table 11.

Table 11

Mean Ratings: Georgia Elementary School Climate Survey

	Mean (M)	Standard Deviation (SD)
GESCS School Climate Score	**3.09**	**.50**
1. I like school.	2.67	.91
2. I feel like I do well in school.	2.96	.83
3. My school wants me to do well.	3.73	.65
4. My school has clear rules for behavior.	3.59	.74
5. I feel safe at school.	3.21	.98
6. Teachers treat me with respect.	3.44	.81
7. Good behavior is noticed at my school.	2.92	.87
8. Students in my class behave so that teachers can teach.	2.44	.81
9. I get along with other students.	2.97	.83
10. Students treat each other well.	2.58	.83
11. There is an adult at my school who will help me if I need it.	3.47	.84

Note: Scale ratings are 1=never, 2=sometimes, 3=often, 4=always

Data Collector Effects

Finally, main effects of data collector on Student Interview ratings are presented in Table 12. Results indicated no significant effect of data collector on SI-R. However, there was a significant effect of data collector on number of examples listed by each student (SI-E). Post hoc Tukey tests revealed that, on average, students interviewed by Data Collector 2 listed more examples related to school climate than those interviewed by other data collectors.

Table 12

Summary of ANOVA: Data Collector

	Sum of Squares	df	Mean Square	F	Sig.
SI-E Rating					
Between Groups	1.94	2	.97	6.91	.00
Within Groups	22.28	159	.14		
Total	24.22	161			
SI-R Rating					
Between Groups	.421	2	.21	1.28	.28
Within Groups	26.73	162	.16		
Total	27.15	164			

Research Question 1: Does the Environmental Observation scale demonstrate adequate construct validity?

Means, standard deviations, and correlations for EOS items are available in Appendix H. EFA with Categorical Principal Component Analysis resulted in eigenvalues for the six proposed factors, with eigenvalues of 2.96 for the first factor, 1.10 for the second factor, and values less than 1.00 for all remaining factors. Models with 1 and 2 factors were further considered given then eigenvalues greater than 1.0 and visual inspection of the scree plot (Furr & Bacharach 2014). Results indicated that the single-factor model resulted in a superior reliability and proportion of variance explained by the extracted factor (Cronbach's alpha, .80, R^2=.49) in comparison to the two-factor solution (Cronbach's alpha, .11, R^2=.18) (Nunnaly, 1978). Thus, it was determined appropriate to extract only one factor in this analysis.

Subsequent EFA analysis was conducted in MPlus in two iterations, with adjustments made based on recommended factor identification procedures (i.e., factor loading of .40 or greater). Using all 6 items, the first EFA resulted in a model with good data fit $X^2(9)$=5.40, p=.80, RMSEA=.00 [90% Confidence Interval=.00-.06], CFI=1.00, TLI=1.12, SRMR=.09. However, item *EO1 – "Emblems of school pride are visible"* did not significantly load onto the factor. Item *EO6 – "How many positive interactions did you observe between educators and students?"* yielded a negative Eigenvalue and was dropped.

A new EFA was re-analyzed with the four remaining items. The final factor structure explained 52% of the variance and demonstrated good data fit $X^2(2)$=.57, p=.80, RMSEA=.00 [90% Confidence Interval=.00-.11], CFI=1.00, TLI=1.14, SRMR=.01 (Hu & Bentler, 1999). The resulting factor loadings for the single factor solution are shown in Table 13. The factor loadings range from .56 to .88. Cronbach's alpha coefficient of reliability for the four-item scale in this

sample was .70, which is a reasonable level of reliability for assessment of a latent behavioral construct (EO_{score} M=2.86, SD=.38) (Nunnaly, 1978) (RQ2B).

The CFA produced similar factor loadings (see Table 2) and data fit $X_2(2)=.57$, $p=.80$, RMSEA=.00 [90% Confidence Interval=.00-.11], CFI=1.00, TLI=1.14, WRMR=.04. These measures indicate good fit to the data using the criteria recommended by Hu and Bentler (1999). The factor explained 31% of the variance in the items. Based on the confirmed factor structure, subsequent analyses were conducted using a total EOS score with the four remaining items (EO2+EO3+EO4+EO5/4). There was no significant correlation between school EOS rating and school SES, but school EOS rating was positively correlated with school diversity; a higher EOS rating was associated with a higher proportion of students of color ($r=.72$, $p<.01$) (RQ2C).

Table 13

Environmental Observation Single-Factor Model

Items	Estimated Factor Loading from Exploratory Factor Analysis	Estimated Factor Loading from Confirmatory Factor Analysis
EO2. Physical environment is conducive to school safety.	.56*	.56**
EO3. Safety resources are clearly visible in separate locations.	.77*	.77**
EO4. Student academic work/evidence of student achievement is displayed.	.63*	.63*
EO5. School leadership, such as principals and administrators, are visible.	.87*	.88**

*Significant at .05 Level

**Significant at .01 Level

Research Question 2: Do the Student Interview scales demonstrate adequate construct validity based on the established factor structure of the Georgia Elementary School Climate Survey?

RQ2A: Student Interview-Examples

SI-E item correlations are available in Table 14. Significant correlations were observed between several corresponding items, further supporting the decision of proceed with CFA based

on a priori hypothesis. Confirmatory factor analysis supported a single-factor model of the SI-E scale with good data fit, $X_2(44)=51.5$, $p=.20$, RMSEA=0.03 [90% Confidence Interval .00-.06], CFI=.97, TLI=.96, WRMR=.76. The model, including loadings for each of the 11 items, are displayed in Figure 2. The SI-E yielded fair scale reliability (Cronbach's Alpha=.69).

Figure 2

Confirmatory Factor Analysis – Student Interview Examples

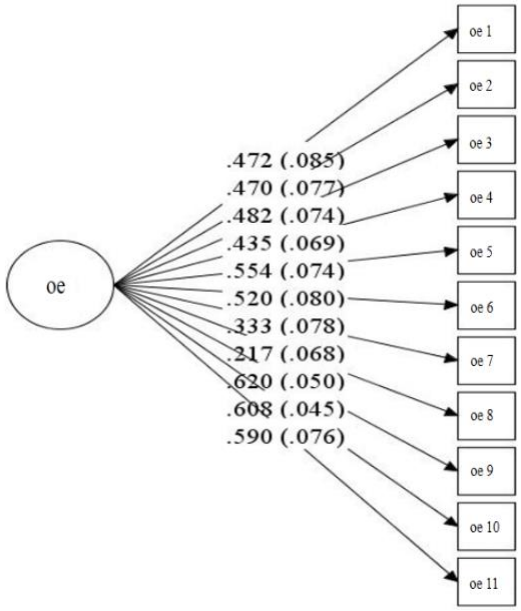


Table 14

Correlations between Student Interview Examples Items

		1	2	3	4	5	6	7	8	9	10	11
1.	What do you like about your school? Name three things.	-	.22**	.13	.08	.26**	.17*	.11	.04	.25**	.16*	.24**
2.	What makes you feel like you do well in school?	-	-	.20*	.11	.21**	.19*	.20**	.10	.17*	.18*	.23**
3.	What way or ways do your teachers make you feel like they want you to do well?	-	-	-	.16*	.26**	.17*	.14	-.06	.28**	.26**	.15
4.	Name three rules for behavior you are expected to follow at school.	-	-	-	-	.06	.04	.13	.17*	.27**	.16*	-.03
5.	What rules or people make you feel safe at school?	-	-	-	-	-	.18*	.26**	.14	.22**	.32**	.24**
6.	In what way or ways do your teachers treat you with respect?	-	-	-	-	-	-	.22**	.14	.25**	.29**	.31**
7.	In the past week, how many times has an adult at school noticed your good behavior?	-	-	-	-	-	-	-	.12	.10	.10	.10
8.	Name three rules for behavior that your classmates usually follow in class.	-	-	-	-	-	-	-	-	.09	.20**	.13
9.	In what ways do **you** show that you want to get along with other students at school?	-	-	-	-	-	-	-	-	-	.32**	.30**
10.	In what ways do students treat each other well at school?	-	-	-	-	-	-	-	-	-	-	.28**
11.	Name an adult or adults who will help you if you need it.	-	-	-	-	-	-	-	-	-	-	-

RQ2B: Student Interview-Ratings

SI-R item correlations are available in Table 15. Significant correlations were observed between several corresponding items, further supporting the decision of proceed with CFA based on a priori hypothesis. Confirmatory factor analysis yielded a single-factor model of the SI-R with good data fit, $X_2(44) = 70.4$, $p<0.01$, RMSEA=.06 [90% Confidence Interval .03-.09], CFI=.94, TLI=.93, WRMR=.96. The model, including loadings for each of the 11 items, are displayed in Figure 3. Reliability analysis indicated that the SI-R scale was a reliable measure of student ratings of school climate (Cronbach's Alpha=.78).

Figure 3

Confirmatory Factor Analysis – Student Interview Ratings

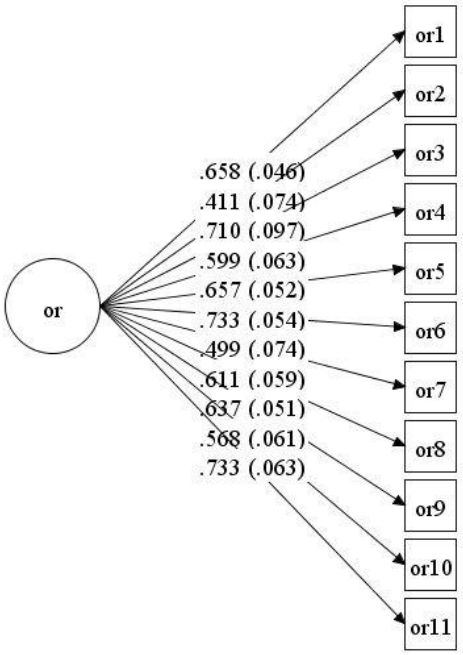


Table 15

Correlations between Student Interview Ratings Items

		1	2	3	4	5	6	7	8	9	10	11
1.	Do you feel you like school always, often, sometimes, or never?	-	.31**	.25**	.28**	.32**	.34**	.30**	.28**	.35**	.23**	.32**
2.	Do you feel you do well in school always, often, sometimes, or never?	-	-	1.00	.05	.25**	.18*	.12	.17*	.16*	.25**	.14
3.	Do you feel your teachers want you to do well always, often, sometimes, or never?	-	-	-	.17*	.30**	.39**	.10	.26**	.26**	.11	.23**
4.	Do you feel that school rules for behavior are clear always, often, sometimes, or never?	-	-	-	-	.13	.34**	.32**	.30**	.23**	.22**	.32**
5.	Do you feel safe at school always, often, sometimes, or never?	-	-	-	-	-	.35**	.10	.26**	.26**	.18*	.53**
6.	Do you feel teachers at school treat you with respect always, sometimes, often, or never	-	-	-	-	-	-	.15	.26**	.30**	.12	.41**
7.	Do you feel good behavior is noticed at your school always, often, sometimes, or never?	-	-	-	-	-	-	-	.32**	.18*	.32**	.09
8.	Do you feel classmates follow rules for behavior in class always, often, sometimes, or never?	-	-	-	-	-	-	-	-	.29**	.40**	.23**
9.	Do you feel you get along with other students at school always, often, sometimes, or never?	-	-	-	-	-	-	-	-	-	.42**	.16*
10.	Do you feel students treat each other well at school always, often, sometimes, or never?	-	-	-	-	-	-	-	-	-	-	.09
11.	Do you feel there is an adult who will help you if you need it at school always, often, sometimes, or never?	-	-	-	-	-	-	-	-	-	-	-

Research Question 3: Is there variance in perceptions of school climate, as measured by the SCWA and GESCS?

Table 16 includes the proportion of between- and within- level variance, as well as intraclass correlations (ICC), for the GESCS and SI-R total scores items. For GESCS ratings, 21% of the variance was accounted for by student level variables (variance within), while school level variables (variance between) accounted for 3% of the variance in overall school climate rating; the ICC was .14, suggesting that 14% of the variance observed in overall school climate rating was between schools. For SI-Ratings, 15% of the variance was accounted for by student level variables (variance within), while school level variables (variance between) accounted for 1% of the variance in overall school climate rating; 7% of the variance observed in overall school climate rating on the SI-R was observed between schools (ICC=.07). Across scales, student level variables accounted for a greater proportion of variance in items and overall school climate compared to school level variables.

Table 16

Proportion of Variance in School Climate Within and Between Schools

	GESCS Ratings			Student Interview Ratings		
	Variance Within	Variance Between	ICC	Variance Within	Variance Between	ICC
Overall School Climate	**.21 (21%)**	**.03 (3%)**	**.14 (14%)**	**.15 (15%)**	**.01 (1%)**	**.07 (7%)**
1. I like school.	.77	.06	.08	.81	.00	.00
2. I feel like I do well in school.	.66	.02	.03	.57	.02	.04
3. My school wants me to do well.	.41	.01	.02	.13	.00	.00
4. My school has clear rules for behavior.	.54	.02	.04	.50	.10	.20
5. I feel safe at school.	.90	.06	.07	.44	.00	.00
6. Teachers treat me with respect.	.61	.04	.07	.35	.00	.00
7. Good behavior is noticed at my school.	70	.05	.00	.65	.01	.02
8. Students in my class behave so that teachers can teach.	.58	.08	.14	.49	.03	.06
9. I get along with other students.	.62	.06	.10	.64	.01	.02
10. Students treat each other well.	.58	.09	.16	.51	.10	.20
11. There is an adult at my school who will help me if I need it.	.69	.02	.03	.43	.00	.00

Note: Intraclass Correlation (ICC)

CHAPTER V: DISCUSSION

The purpose of this study was to develop and validate a school climate walkthrough tool that assessed environmental aspects school climate and self-reports of school climate from a select student sample, particularly to enhance assessment of school climate from a cultural-ecological framework. Initial psychometric support for the EOS shows evidence of a tool that can be used to assess the physical environment via safety resources, administrator presence, and student learning products. In terms of the Student Interview, the SI-Examples scale did not demonstrate adequate construct validity or reliability of ratings. However, the SI-Ratings demonstrated construct validity and scale reliability, as evidenced by a good-fitting single factor model of the SI-R data and good reliability of ratings. Further convergent validity between the SI-Ratings and the GESCS was established by comparing the degree of within- and between-level variance in school climate ratings across scales; for both, individual (student) factors contributed to a greater proportion of the variance than school level factors in both items and overall school climate. Together, findings contribute to school climate conceptualization and assessment within the Cultural-Ecological Model of School Climate (CEMSC), which has several implications for educational practice and policy.

Cultural-Ecological Theory of School Climate

Results of the present study expand evidence of cultural and ecological variables in students' experiences of school climate, as well as the measures that can be used to assess these aspects. The SI-R scale appears to capture a construct of school climate that aligns well with GESCS, and student characteristics accounted for the majority of variance in SI-Ratings at the overall and item level, as evidenced by previous school climate studies (La Salle et al., 2015; Voight et al., 2015). Thus, results continue to support the application of a cultural-ecological model of school climate to identify and implement culturally appropriate interventions.

Student Variables

Individual factors are most critically relevant to student experiences at school, indicating a need for targeted assessment to identify and address group needs. Targeted interventions place individual characteristics at the forefront to address the unique challenges and experiences of that group (Averill & Rinaldi, 2013). Student outcome data have traditionally been disaggregated by group to determine how students are performing relative to one another. When disaggregated by demographic group, self-report school climate data from the SI-R provides a "bottom-up" vantage point of how students experience the school based on their identity, expanding insight about the specific experiences that relate to differences in outcomes. Thus, student perspectives of school climate at the group level can be utilized to develop interventions that address specific needs. For example, Buckley, Storino, & Sebastiani, (2003) found that in a racially diverse sample of 369 middle school students, perceptions of school climate predicted twice as much of the variance in academic achievement for boys in comparison to girls; boys in the study had lower overall GPAs and reported significantly more experiences of peer victimization and aggression (Buckley et al., 2003). Therefore, boys may be at higher risk for academic failure with negative experiences of school climate, and peer relations and safety may be crucial areas of intervention to enhance their experiences at school. Further investigations are required to evaluate the efficacy of school climate interventions across demographic groups, especially when they are geared toward target student groups.

Schools can also proactively address influential student-level factors by identifying at-risk groups (i.e., using disaggregated GESCS data), and then administering the SI-R to monitor perceptions in that group intermittently. The random selection component of the student interview makes it particularly effective for discretely monitoring the perceptions of vulnerable groups. For example, school climate has been found to moderate the relationship between a

student's individual economic background and academic achievement (Cabieses, Pickett, & Wilkinson, 2016). Moreover, relative deprivation, or a sense of one's economic resources in comparison to their reference group, has been shown to influence students' perceptions of themselves in relation to peers (e.g., a middle-class student may feel marginalized in school with affluent peers) (Cabieses, Pickett, & Wilkinson, 2016; Wilkinson & Pickett, 2009). Thus, the proportion of students representing different socioeconomic backgrounds may be a variable of interest in schools with students from mixed socioeconomic backgrounds. With this information, school leaders can plan strategic ways to measure and improve school climate for lower income students without drawing attention to their SES (i.e., low-income students receive certain colored lanyards to signal selection for an interview). In this manner, acknowledging individual level factors expands the capacity to understand and improve the experiences of an at-risk group.

School Variables

At the group level, school climate data captures an aggregate of school experiences across students. Though school indicators accounted for little of the variance in student reports on the GESCS and in the present study, relationships among variables suggest some degree of influence of school-level variables on student experiences. For example, greater school diversity, as defined by the proportion of students of color enrolled in the school, was associated with lower student-reported perceptions on the GESCS and SI-R, which is consistent with previous work citing a negative association between school diversity and student perceptions of climate (Parris et al., 2018). A higher proportion of low-income students was also associated with lower perceptions on the GESCS, which is also consistent with previous findings (Khoury-Kassabri, BeSnbenishty, Astor, & Zeira, 2004; Cheema & Kitsanas, 2014).

Again, situating student perspectives within the context of school variables serves to enhance intervention, especially at the universal level. Voight et al. (2015) found that students

from all racial/ethnic backgrounds reported more positive experiences of school climate in schools with universal interventions related to cultural diversity (explicit initiatives to close the achievement gap, training staff in multicultural competencies, and reflecting students' ethnic background in course curricula) (Voight et al., 2015). Additional information from the EOS highlighted a potential difference in student and adult (visitor) perceptions of school diversity and area for intervention development. To bridge the gap in these perspectives, universal interventions may also explicitly address cultural climate to ameliorate students' perspectives on diversity. Several case studies have explored the effects of instruction and conversations about race between teachers and students, demonstrating qualitative evidence of students' increased racial identify and understanding of racial differences (Epstein, Mayorga, & Nelson, 2011; Hollingworth, 2009). With the addition of these practices, educators can capitalize on the richness of diversity to enhance students' experiences of the school climate.

Ecological Assessment of School Climate

The CEMSC calls for the development of valid instruments to assess the environment and gather more detailed information about student experiences of the school environment. The current study contributes novel information about the ways in which school climate data can be collected and used in both of these areas. The EOS sheds light on the school features that may be examined to measure school climate as an environmental construct, while the SI-Examples scale offered students an opportunity to describe experiences related to school climate in a brief and efficient manner. Both scales highlight the potential to collect meaningful qualitative information about the environment and student experiences of school climate, and expand on the ways in which school climate data may be used.

Assessing the Environment

Findings contribute to evidence that individuals experience the school environment in a way that influences their perception of the climate, and also help to conceptualize which aspects of the environment are most salient to individuals. The items retained in an EOS construct capture three generally recognized domains of school climate: safety, learning, and organizational leadership. As with previous observational measures like the Tiered Fidelity Index (TFI), these domains were represented by items that were very clearly identifiable and quantifiable. The utility of the EOS lies in the interventions that can directly correspond to and address these identified indicators of school climate.

Safety. School safety was assessed in terms of the physical layout and safety resources in the school setting. There is a documented connection between school physical layouts and student academic outcomes (Crampton, 2009; Durán-Narucki, 2008; Lewis, 2001; Tanner, 2008). Environmental changes are relatively feasible and low-cost for school stakeholders to implement as part of school climate improvement efforts. Areas for consideration may include adequate lighting, windows with outdoor views, capacity for personal space (i.e., number of students passing in hallways simultaneously), temperature and air circulation, and acoustics (Tanner, 2008; Cheryan, Ziegler, Plaut, & Meltzoff, 2014). Additionally, the visibility and clarity of safety resources, such as fire extinguishers, first aid kits, accessibility signs, exit signs, and emergency evacuation plans should be periodically evaluated (Szuba, Young, & U.S. Department of Education School Facilities Maintenance Task Force, 2003).

Administrator Behaviors. Administrator presence also emerged as an important variable in the environment. In school climate, organizational systems capture the leadership in place within school (Cohen et al., 2009). In practice, administrator visibility may be directly observed via dynamics and interactions between administrators and the school community (teachers, staff, and students). In a study on effective leadership practices in high-achieving elementary schools,

Jackson (2018) identified visibility and open communication as key aspects of principal leadership style. Visibility is a combination of both approachability and frequent presence (Robert, 2006). To promote climate, principals may strive to communicate the desire to greet and speak to staff and students, as well as to actively engage in the general school environment.

Teaching and Learning. Finally, the display of learning products may also be considered an important feature of the environment that captures teaching and learning. Displays are popular in schools for both their aesthetic qualities and celebration of student achievement. However, learning products also contribute to a positive climate as documentation of both teachers' progress in instruction and students' progress in learning. Thus, student work should be changed regularly to reflect growth (Eckhoff, 2019). Further, educators should not shy away from displaying works in progress (Eckhoff 2019). These strategies tie directly to the ways in which school visitors engage with student material, which can be monitored via EOS administration.

Expanding Self-Report Data

Though the SI-Examples scale may not provide adequate quantitative information, results suggest that valuable qualitative information can be extracted from the scale. Specifically, the qualitative data can illustrate the interplay between student experiences and their perceptions of the environmental setting and behaviors. For example, there is evidence that students had more difficulty providing examples of school experiences (SI-E) in comparison to rating feelings associated with those experiences (SI-R). To illustrate, students struggled to list *what* made them feel successful in school on the SI-E while simultaneously reporting on the SI-R and GESCS that they *felt* successful in school. It may be important for schools to modify practices to increase students' articulation of experiences at school. For example, teachers may emphasize the

teaching and learning process rather than outcomes to expand students' conceptualization of their academic success beyond grades (Desoete, 2008).

Additionally, students demonstrated the most success with naming observations related to personal rule-following, peer rule-following, and school behavioral expectations. It may be worth investigating behavioral expectations and discipline as salient aspects of a student's school experience, especially as they relate to perceived feelings in other areas. For example, the number of examples listed for school rules was significantly associated with more positive perceptions related to school success and teacher expectations (r=.16, p<0.05; r=.16, p<0.05). Though not corresponding pairs, these items are conceptually related, as better classroom management of student behaviors can increase student access to teaching and learning (Gage, Scott, Hirn, MacSuga-Gage, 2018). A future mixed-methods study may explore themes among responses reported by students on the SI-E in addition to the number of examples provided.

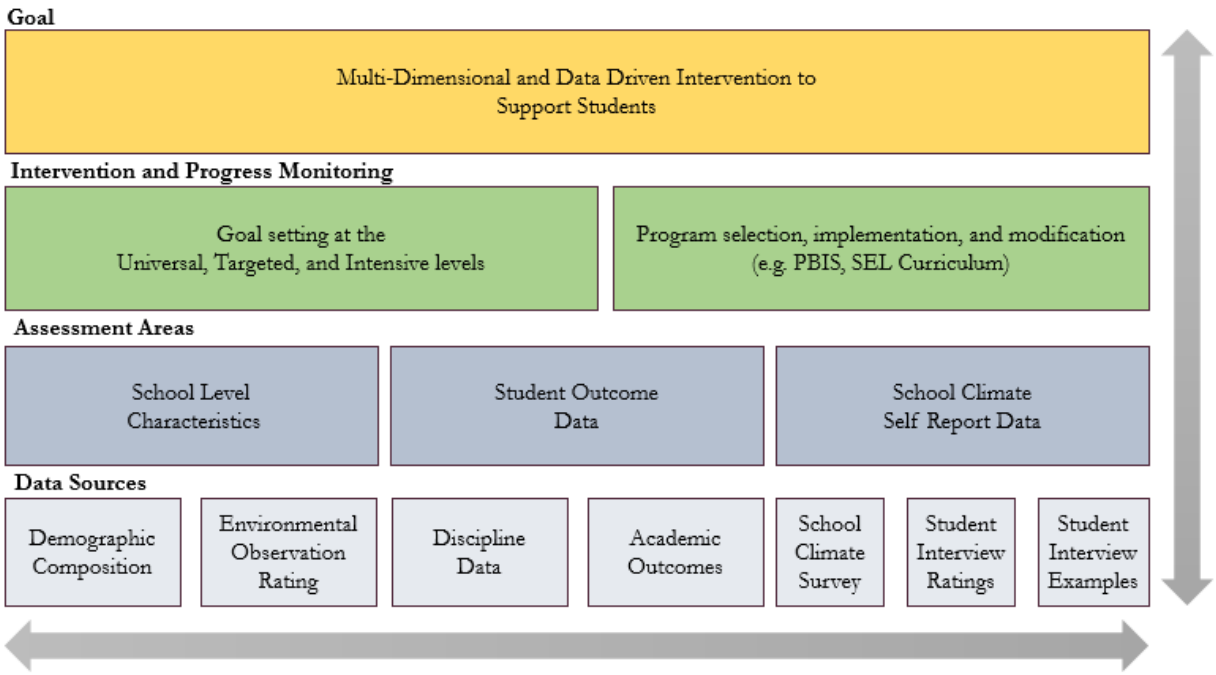
Practical Implications

Preliminary support for the SCWA indicates that it may be used to amplify ongoing school climate monitoring, particularly with the Georgia Elementary School Climate Survey (GESCS). In practice, these efforts contribute to a balanced system of assessment and intervention with school climate data and other data points of interest. Figure 3 illustrates how SCWA data fits within a synchronized system of school assessment and intervention. The overarching **goal** of a robust system of assessment is to support students through rigorous, data-driven interventions. **Intervention and progress monitoring** serve to critically evaluate goals and corresponding interventions for school improvement, especially as a result of students' response to interventions. **Assessment areas** inform goals and interventions, and should thus capture school characteristics, student outcomes, and student self-reports of school climate. Finally, **data sources** are used to operationalize and measure performance in the defined

assessment areas. Data sources are equally viable in a school assessment system—the horizontal arrow in Figure 4 is meant to illustrate the interrelationship between data sources, especially as they inform one another. For example, outcome data on peer victimization is informed by student reported perceptions of safety and vice versa. Specific to this study, the selected data sources include both the EOS and SI portions of the SCWA as a school level indicator and student self-report measure of school climate, respectively. These sources are enhanced by (and enhance) school demographic data, student outcome data (i.e., archival), and self-reports of school climate from the full student population on the GESCS. The vertical arrow reflects ongoing, cyclical use of multiple data sources over time.

Figure 4

Aligning Data Sources for School Improvement



Multi-Tiered Systems of Support (MTSS)

The SCWA can also contribute to MTSS to provide a continuum of resources, strategies, systems, and practices to address barriers to student learning at increasingly targeted levels

(universal, targeted, specific) (Averill & Rinaldi, 2013). Van Lone et al. (2019) describe a systematic process for improving school climate within the context of MTSS, citing the importance of data sources that refine and measure progress toward short- and long-term goals as well timely data collection, summary, and graphic display. The GESCS can be administered bi-annually to guide annual goal-setting and monitor the impact of interventions on school climate perceptions across the years (White, La Salle, Ashby, & Meyers, 2014). Long-term goals are set to address school climate domains at the universal and targeted levels. For example, an elementary school may be interested in enhancing perceptions of school safety for all students, and specifically be interested in enhancing staff-student relationships for fourth graders as they prepare to transition to middle school. The school may set long-term goals for students over the course of three years: increase the overall perception of school climate for students to the national average, and increase fourth graders' average school climate rating on the GESCS to the national average over the course of three years.

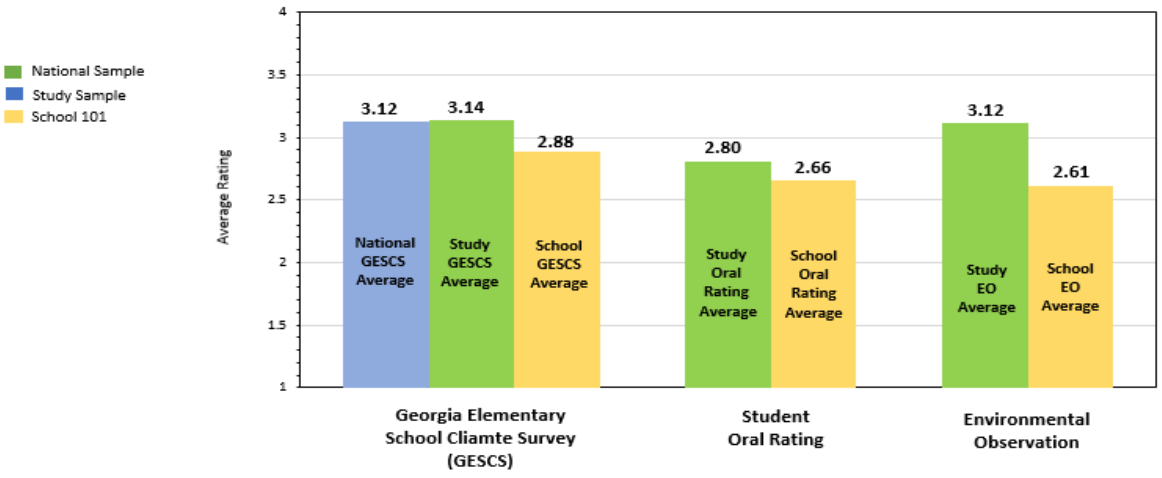
To support these goals, annual objectives may be to increase the visibility of safety resources and hallway monitoring on a school wide scale, and for each fourth grade students to identify and develop a relationship with a supportive adult at school via weekly learning groups (Centers for Disease Control and Prevention, 2009; O'Malley & Amarillas, 2011). Both parts of the SCWA support intermittent monitoring of these specific objectives. The Environmental Observation provides a snapshot of a specific area of the school, which can be selected based on the related goal. Considering the universal goal for safety in this example, a general area (e.g., hallway) can be observed at a time with high student and adult traffic. The EOS assesses the presence and quantity of environmental features, so it is valuable to examine ratings on specific items; in this case, stakeholders may consider EO2: *Physical environment is conducive to school safety* and EO3. *Safety resources are clearly visible*. The data serve as a point of quality control

to ensure resources interventions are in place (e.g., a low rating of visible resources can be remedied by identifying which are missing). Simultaneously, the SI-R is used to anticipate results of the full survey administration. In this case, the SI-R may be administered to a subset of fourth grade students, linking short-term objectives to increase positive interactions at this level to the larger long-term goals for improvement in fourth graders' overall perception of school climate. Results are then used to bolster or refine the interventions in place. If fourth grade perceptions of climate are positive based on the SI-R, it may indicate that they are responding well to adult check-in systems. If not, the goal may be changed or increased.

Together, the SCWA and GESCS comprise a system of formative and summative assessment of school climate improvement initiatives. A school may administer the GESCS at the start of fall and end of spring, with SCWA administration in the winter and early spring. In the absence of longitudinal data, results may be examined alongside comparable samples. To exemplify, Figure 5 shows the results of School 101, comparing GESCS results to that from a national sample of GESCS respondents, and comparing both GESC and SCWA results from the full sample in the present study.

Figure 5

Comparing School 101 to National and Study Samples



Implications for Educational Policy

A cultural-ecological framing of school climate assessment also has implications for understanding what supports schools in general based on their demography. Specifically, the importance of both individual and school level considerations encourages stakeholders to understand schools as systems in order to promote positive school climate. For example, recent studies have returned to the relationship between school climate and school SES to examine whether a positive school climate can serve as a buffer for the negative effects of lower school SES (Brookover et al., 1978; Berkowitz, Moore, Astor, & Benbenishty, 2017). As in the current study, findings have suggested that lower school-level socioeconomic status may be associated with lower student-reported perceptions of school climate (Khoury-Kassabri, BeSnbenishty, Astor, & Zeira, 2004). Cheema and Kitsanas (2014) found that the relationship between student and school level SES and academic achievement was weaker in schools with a more positive school climate to schools with a less positive climate, indicating that the relationship between academic achievement and student SES can be moderated by positive school climate (Cheema and Kitsanas, 2014). This rationale is important in allocating funds for school climate improvement because economic barriers are more likely to limit resources in low SES schools (Berkowitz et al., 2017). Although the U.S.D.O.E has invested in the development of school climate accountability systems, further initiatives may be taken to direct opportunities such as the School Climate Transformation Grant toward low-income schools (U.S. Department of Education, 2016; U.S. Department of Education, 2014). Additional school-level factors can be identified to better serve schools based on their overall student characteristics. Further research can also shed light on the specific domains of school climate (e.g., safety, teaching and learning) that are most salient depending on the school profile.

Limitations & Future Directions

While there are several strengths to this study, there are also notable limitations and future areas for development. Foremost, the sample was incomplete in that not all schools that participated in the walkthrough assessment administered the GESCS, and some schools did not administer the GESCS to 4th graders at all. Convenience sampling was a particular weakness in this respect, as all grades were not able to participate in both the Student Interview and the GESCS. Ideally, the Student Interview and GESCS would be administered to students in the same school and grade to allow for direct correlations between the constructs and items across measures. A future study may be conducted on a larger scale, with GESCS and Student Interview results being compared using student samples from the same population.

Results should also be interpreted cautiously given the psychometric properties of the newly developed SCWA. Ideally, the SCWA could be administered by either an outside evaluator or a member of the school community to promote feasibility of implementation. Therefore, additional development and examination of standardized assessment methods and fidelity monitoring will be important in the continued development of the SCWA. Specifically, the Student Interview-Examples scale showed adequate factor structure, but factor loadings below .4 across items and poor reliability of ratings across students, indicating weak relationships between items and a cohesive construct, as well as inconsistent measurement of the construct across students (Furr & Bacharach, 2014). Additionally, there was a rater effect of data collector only on the SI-E portion of the Student Interview, indicating that the data collector administering the Student Interview had an effect on the number of examples each student listed. In the future, researchers may take a more scripted approach to posing Student Interview

questions, as they are posed with consistent wording and response scale across the SI-R and GESCS.

Few Environmental Observation were piloted given the preliminary nature of this study and anticipated time to complete the EO. A future SCWA may include multiple items within each domain (e.g., 5 items per school climate domain), so that more items may be retained in a single-factor model of EO. The remaining EOS items did not assess all five domains of school climate as initially intended (school norms, safety, learning, relationships, and organizational leadership), as items assessing school norms and relationships were dropped. Prosser (2007) emphasizes the importance of recognizing visual culture, norms, and values in a school as a combination of "generic and unique elements" suggesting that identifying school norms and values are more difficult to rate based on a predetermined list of indicators (Prosser, 2007). In terms of relationships, and this item may be refined by targeting a specific interaction that has been identified as beneficial in school settings, such as positive praise (Myers, Simonsen, & Sugai, 2011). Generally, more items should be explored to build a more robust construct of environmental observations.

Finally, the study would be enhanced by the additional inclusion of archival data and additional school data sources given the importance of a multi-informed system of school assessment with archival, self-report, and observational indicators of school climate (Anderson, 1982). Similar to self-report measures, the oral reports of student climate should be connected to disciplinary, academic, and other relevant outcomes. The environmental observation was also found to be related to another school-level indicator (diversity) in this study and therefore may be connected to academic outcomes in similar ways. A future study might match SCWA student report data and environmental ratings with GESCS data, student outcomes, and school-level indicators.

Conclusions

In sum, the SCWA may be used to contribute to comprehensive school assessment and improvement efforts within a CEMSC. Preliminary results indicate that useful data can be collected from a subset of students with the SI-R, allowing examination of developments in student perspectives of school climate as well as perceptions in target groups. The SI-E scale provides some information about the extent to which students are able to concretely express their experiences at school, urging consideration of educator dialogue with students regarding the intention of educational practices such as teaching methods. Finally, initial support for an environmental observation construct highlights safety, administrator presence, and teaching and learning products as aspects of the physical environment that influence perceptions of school climate and can addressed and monitored.

Administering the SCWA and creating school reports highlighted the ways in which the walkthrough tool addresses barriers to continuous and effective program evaluation in schools. First, a common barrier to sustainability in school climate improvement efforts is the lack of resources to implement school climate assessments on an ongoing basis (Ciccone & Freiberg, 2013). The SCWA involves few resources and time to implement, requiring one adult data collector and a subset of students as to enhance efficient progress monitoring. Next, the SCWA combines multiple perspectives of school climate in a single administration—that of an adult evaluator and a subset of students—acknowledging the importance of multiple informants in school climate assessment (Anderson, 1982). This is beneficial in that, ideally, schools would be able to administer the SCWA independently using raters within their own schools to increase sustainability and feasibility. Finally, in an overwhelming data driven education system, educators can lose sight of the utility of data monitoring in daily practice (Datnow & Hubbard, 2015). Using the SCWA and GESCS together helps strengthen the relationship between current

school practices and student outcome data. With access to school climate measures that are empirically based, assess multiple perspectives, and maximize resources, schools are better positioned to engage in a rigorous process of school climate evaluation and intervention with benchmarks for improvement over time (Faster & Lopez, 2013).

By contributing to cultural-ecological conceptualization and assessment of school climate, the present study highlights several implications for practice and policy. Tiered systems of support are upheld by formative and summative assessment of interventions; combined use of the SCWA and GESCS can be used to evaluate and modify ongoing school improvement efforts based on student response. Results contribute to understanding of the influence of individual and school level variables in students' experiences of school climate, as well as the measures that can be used to assess them periodically and intermittently. While sources of within- and between-level variance in school climate are equally important to consider, the extent to which each affects school climate is specifically relevant to avenues of intervention when paired with additional data sources. Examination of these indicators can inform proactive universal and targeted interventions for vulnerable student groups. Above all, there is a benefit to multi-informed school assessment systems that incorporate the relationships between archival, self-report, and observational school climate data.

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Appendix A

Georgia Elementary School Climate Survey (GESCS)

Demographic Information	
Grade	○ 3 ○ 4 ○ 4
Gender	○ Female ○ Male ○ Prefer not to say
Ethnicity	○ Hispanic or Latino ○ Not Hispanic or Latino
Race	○ White ○ Black or African American ○ Asian ○ American Indian or Alaskan Native ○ Native Hawaiian or Other Pacific Islander ○ Two or More Races
1. I like school.	□ Always □ Often □ Sometimes □ Never
2. I feel like I do well in school.	□ Always □ Often □ Sometimes □ Never
3. My school wants me to do well.	□ Always □ Often □ Sometimes □ Never
4. My school has clear rules for behavior.	□ Always □ Often □ Sometimes □ Never

5. I feel safe at school.	□ Always □ Often □ Sometimes □ Never
6. Teachers treat me with respect.	□ Always □ Often □ Sometimes □ Never
7. Good behavior is noticed at my school.	□ Always □ Often □ Sometimes □ Never
8. Students in my class behave so that teachers can teach.	□ Always □ Often □ Sometimes □ Never
9. I get along with other students.	□ Always □ Often □ Sometimes □ Never
10. Students treat each other well.	□ Always □ Often □ Sometimes □ Never
11. There is an adult at my school who will help me if I need it.	□ Always □ Often □ Sometimes □ Never

Appendix B
School Climate Walkthrough Assessment

School Climate Walkthrough Assessment (SCWA)
Administer as a supplement to the Georgia Elementary School Climate Survey

ENVIRONMENTAL OBSERVATION				
Answer each Environmental Observation question by (1) reading the item, (2) walking through the setting for approximately 1 minute while considering ONLY the criteria of that item, and then (3) providing a rating. Repeat this process for each item.				
	None observed	**1-2 example observed**	**3 examples observed**	**More than 3 examples observed**
NORMS, GOALS, & VALUES	○	○	○	○
Emblems of school pride are visible. Examples: school crest, school mascot, sports team trophies or photos, core values or school acronyms (e.g. "Bears try their Best!" / GROW: good choices, respect, outstanding effort, work as a team), Non-examples: school rules or behavioral expectations, school name, teachers' individual decorative posters				
SAFETY I	○	○	○	○
Physical environment is conducive to school safety. Examples: clear floors and pathways, well-lit hallways and stairwells, teachers present in halls during passing time Non-Examples: school rules or behavioral expectations posted				
SAFETY II	○	○	○	○
Safety resources are clearly visible in separate locations. Examples: emergency escape plans, clearly marked exit signs, fire extinguisher, fire alarm, wet floor sign Non-Examples: two safety plans posted on the same wall side by side, verbal directions				
LEARNING	○	○	○	○
Student academic work/evidence of student achievement is displayed. Examples: student assignments, student artwork, student achievement bulletin board (e.g. honor roll, perfect attendance) Non-Examples: parent-teacher conference reminder, sports team trophies or photos				
ORGANIZATIONAL STRUCTURE	○	○	○	○
School leadership, such as principals and administrators, are visible. Examples: administrators are available/visible during transitions, in the classroom, or in other settings (e.g. cafeteria, auditorium), administrators greet teachers/other staff, positive principal announcement Non-Examples: name and position of administrators are posted on their door				
RELATIONSHIPS	0-2	3-6	7-9	>10

	Interactions observed	Interactions observed	Interactions observed	Interactions observed
Educators (e.g. principals, teachers, school staff) initiate positive interactions with students. Examples: educators greet students, educators make positive remarks to students about their behavior, educators check in with students if they are out during instructional time Non-Examples: educators reprimand/redirect student behavior, educators give directions//prompts				

STUDENT INTERVIEW		
Please select 5 students at random to individually answer the following questions. Allow each student to complete the Demographic Questions independently. Read each Oral Interview item aloud and allow each student to respond orally.		
DEMOGRAPHIC QUESTIONS		
Grade	○ 3rd ○ 4th ○ 5th	
Gender	○ Male ○ Female ○ Prefer not to say	
Race/Ethnicity	○ Asian ○ American Indian or Alaskan Native ○ Black or African American ○ Native Hawaiian or Other Pacific Islander ○ White ○ Two or more races	
Latinx Ethnicity	○ Hispanic or Latinx ○ Not Hispanic or Latinx	
STUDENT INTERVIEW		
	Number of responses listed	**Rating** *(1-always, 2-often, 3-sometimes, 4-never)*
1. What do you like about your school? Name three things. (allow response) *Do you feel you like school always, often, sometimes, or never?*	○ Names 0/irrelevant ○ Names 1 ○ Names 2 ○ Names 3	○ *1* ○ *2* ○ *3* ○ *4*
2. What makes you feel like you do well in school? (allow response) *Do you feel you do well in school always, often, sometimes, or never?*	○ Names 0/irrelevant ○ Names 1 ○ Names 2 ○ Names 3	○ *1* ○ *2* ○ *3* ○ *4*

3. What way or ways do your teachers make you feel like they want you to do well? (allow response) *Do you feel your teachers want you to do well always, often, sometimes, or never?*	○ Names 0/irrelevant ○ Names 1 way ○ Names 2 ways ○ Names 3 ways	○ *1* ○ *2* ○ *3* ○ *4*
4. Name three rules for behavior you are expected to follow at school. (allow response) *Do you feel that school rules for behavior are clear always, often, sometimes, or never?*	○ Names 0/irrelevant ○ Names 1 rules ○ Names 2 rules ○ Names 3 rules	○ *1* ○ *2* ○ *3* ○ *4*
5. What rules or people make you feel safe at school? (allow response) *ou feel safe at school always, often, sometimes, or never?*	○ Names 0/irrelevant ○ Names 1 ○ Names 2 ○ Names 3	○ *1* ○ *2* ○ *3* ○ *4*
6. In what way or ways do your teachers treat you with respect? (allow response) *ou feel teachers at school treat you with respect always, sometimes, often, or never?*	○ Names 0 / irrelevant ○ Names 1 ○ Names 2 ○ Names 3	○ *1* ○ *2* ○ *3* ○ *4*
7. In the past week, how many times has an adult at school noticed your good behavior? (allow response) *ou feel good behavior is noticed at your school always, often, sometimes, or never?*	○ No one has noticed ○ 1 time ○ 2-3 times ○ More than 3 times	○ *1* ○ *2* ○ *3* ○ *4*
8. Name three rules for behavior that your classmates usually follow in class. (allow response) *Do you feel classmates follow rules for behavior in class always, often, sometimes, or never?*	○ Names 0 expectations ○ Names 1 expectation ○ Names 2 expectations ○ Names 3 expectations	○ *1* ○ *2* ○ *3* ○ *4*
9. In what ways do **you** show that you want to get along with other students at school? *Do you feel you get along with other students at school always, often, sometimes, or never?*	○ Names 0 /irrelevant ○ Names 1 ○ Names 2 ○ Names 3	○ *1* ○ *2* ○ *3* ○ *4*

10. In what ways do students treat each other well at school? *Do you feel students treat each other well at school always, often, sometimes, or never?*	○ Names 0 /irrelevant ○ Names 1 ○ Names 2 ○ Names 3	○ *1* ○ *2* ○ *3* ○ *4*
11. Name an adult or adults who will help you if you need it. *Do you feel there is an adult who will help you if you need it at school always, often, sometimes, or never?*	○ Names 0 /irrelevant ○ Names 1 ○ Names 2 ○ Names 3	○ *1* ○ *2* ○ *3* ○ *4*

Appendix C
School Agreement Form

SCHOOL INVITATION TO PARTICIPATE RESEARCH STUDY

UCONN
UNIVERSITY OF CONNECTICUT

Principal Investigator: Tamika La Salle, PhD
Student Investigator: Jesslynn Rocha Neves, M.A.
Study Title: Development of a Development of a School Climate Walkthrough Assessment

Your school is invited to participate in a research study being conducted by a doctoral student from the University of Connecticut. You have been identified as a potential participant given that you have administered or intend to administer school climate assessments (e.g. Georgia School Climate Surveys) via ***PBISApps.org*** as part of your ongoing school improvement efforts. I hope that you will take the time to review this information and consider participating in this study.

This form will give you the information you will need to understand why this study is being done, and what you need to do if you want your school to participate. If you decide that you want your school to participate, please sign the attached form and return it to the student investigator by _____ at jesslynn.neves@uconn.edu. Thank you for your time!

Why is this study being done?
This study involves development of a measurement tool, to be used alongside the Georgia Elementary School Climate Survey/Georgia Brief School Climate Inventory (GaBSCI), to assess environmental indicators and student reports of school climate via a brief school walkthrough. The data collected from the survey will be used to identify areas of strength and areas of need for positive school climate efforts. Survey analysis of the data provides information that:

- will provide an overall view of student perceptions of school climate among elementary and middle school students

- will help to guide school level decision making to promote a positive school climate.

What are the study procedures? What will my students be asked to do?

If you choose to participate, you will complete the School Agreement Form attached to this document, which serves as acknowledgement of your understanding of yours and the researcher's responsibilities. The School Agreement Form will also ask you to provide information on the overall school demographics, including the socioeconomic status, gender, and racial/ethnic makeup of the student population. You will also be provided with Teacher Information Letters, Parent/Guardian Information/Opt-Out Forms and Student Information Letters to distribute to your school community. These forms will outline study procedures and participant rights. You will also receive neon colored breakaway lanyards to distribute to teachers; the lanyards will be worn by students on data collection day so that they are visible to the data collector. Only students who are in the grade selected for the study will receive a lanyard, and students who are ineligible for the study (e.g. parent opt-out form returned, significant speech/intellectual impairment) will wear a blue lanyard so that they will not by selected by the data collector. Please do not tell students the meaning of the blue lanyard. Data collection will take

place from April-June, alongside the window of your administration of the Georgia Brief School Climate Inventory.

An assessor from the University of Connecticut will visit your school to complete a walkthrough assessment, and to administer an oral survey interview to a handful of randomly selected students. The elementary oral survey includes 11 items, while the middle school oral survey includes 9 items.These items related to student perception of the school climate and safety (for example, they may be asked if they have a connection to a trusted adult at school). Apart from that, students selected for the interview will be asked to answer brief demographic questions that address grade, race/ethnicity, and gender. No individually identifying information will be collected at any time. Students may skip questions during survey completion, and if all questions are not answered the data will not be used. We expect the survey to take about 5 minutes to complete.

The survey will be given during non-instructional time. Students will be informed that they may skip any question that they do not want to answer or may discontinue taking the survey at any time. Students who are wearing a lanyard (not blue) may be late to class, escorted by a data collector, if a student interview takes longer than the scheduled time.

If you would like to review the survey please use this link to preview the online survey:

https://uconn.co1.qualtrics.com/jfe/form/SV_6LRrnOaHMMipZZP

If parents do not want their child to participate, what will they do instead?

Parents who do not want their child to participate in the study must return a completed and signed Parent Information/Opt-Out Form. All students who do not have a signed form will be automatically enrolled in the study. On the day that the data collector visits the school, teachers will distribute neon colored breakaway lanyards to be worn by students so that they are visible to the data collector. Only students who are in the grade selected for the study will receive a lanyard, and students who returned a signed parent opt-out form will wear a blue lanyard so that they are not selected by selected by the data collector. Further, teachers will distribute the blue lanyards to students with severe cognitive or language impairment, given that the survey is given orally and intended to be brief. Any student can also choose not to wear the lanyard if they do not want to be selected for an interview. The rater will only select students wearing a lanyard (not blue) for interviews.

What are the risks or inconveniences of the study?

We believe there are no known risks to schools, teachers, parents/guardians or students because of their participation in the research study; however, a possible inconvenience may be the time it takes to complete the study.

What are the benefits of the study?

Schools will receive data feedback to help them guide their existing school improvement initiatives. Therefore, your participation may help you and educators at your school learn about student perceptions of school climate to guide broad school improvement efforts.

In addition, your school's participation in this study will help with the development of a school climate walkthrough tool that can help guide efforts to promote a positive school climate.

How will my school's information be protected?

The following procedures will be used to protect the confidentiality of the data collected at your school. No individually identifying information will be collected at any time during this study. The data collector will enter student responses through an encrypted online survey system, Qualtrics, using a tablet/iPad. The Qualtrics account is password protected and can only be accessed by the principal and student investigators for this research study.

At the conclusion of this study, the researchers may publish their findings. Information will be presented in summary format and, no school or student names will be included in any publications or presentations

We will do our best to protect the confidentiality of the information we gather from you but we cannot guarantee 100% confidentiality. Confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the internet by any third parties.

You should also know that the UConn Institutional Review Board (IRB), Research Compliance Services may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not children's responses or your school's involvement in the study. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can my school stop being in the study, and what are our rights?

You do not have to participate in this study. If you decide you want your school to take part in the study, then later change your decision, you may contact the student investigator. It is strongly recommended that withdrawal from the study, if necessary, take place before data collection.

Whom do I contact if I have questions about the study?

I am happy to answer any question you have about this study. If you have questions about your this project, or about your school's participation in this research, you may contact student investigator, Jesslynn Rocha Neves at (774)-202-9252 or jesslynn.neves@uconn.edu.

SCHOOL AGREEMENT FORM REGARDING PARTICIPATION IN RESEARCH STUDY

UCONN
UNIVERSITY OF CONNECTICUT

Principal Investigator: Tamika La Salle, PhD
Student Investigator: Jesslynn Rocha Neves, M.A. ***(jesslynn.neves@uconn.edu)***
Study Title: Development of a Development of a School Climate Walkthrough Assessment

Notification of Consent:
I have read this form and decided that I give permission for my school to participate in the study described above. My signature also indicates that I have received a copy of this informed consent form. Further, I understand and agree to the following study guidelines:

- Schools must maintain continuous communication with the student investigator.
- School will meet with the student investigator, either by phone or in person, to discuss the logistics of data collection prior to data collection.
- Schools are responsible for distributing study materials, including the (1) Teacher Information Letters, Parent/Guardian Information/Opt-Out Forms and Student Information Letters to their teachers/staff members, students and parents/guardians, and (2) neon colored breakaway lanyards to teachers.
- Schools agree for a data collector from the University of Connecticut to visit their school to conduct the SCWA. The school will be notified at least one week prior to the data of the school visit.
- Schools must offer at least three potential dates/times for assessors to visit their school.
- Schools that are unresponsive to the student investigator or assessors for longer than 2 weeks will be withdrawn from the study.

I agree to notify the primary investigator immediately if I plan to withdraw my school from this study at any time. Please return this form to the student investigator via e-mail by _____.

_____
School Name

_____
Print Administrator's Name

_____
Administrator Role (e.g. principal)

_____
Administrator's Signature

School Demographic Information

Students receiving free/reduced lunch:	%
Students identifying with each gender:	
Male	%
Female	%
Third Gender/Nonbinary	%
Students identifying with each race/ethnicity:	
American Indian/Alaska Native	%
Asian	%
Black/African American	%
Hispanic/Latino	%
Native Hawaiian/Other Pacific Islander	%
White	%

Appendix D
Teacher Information Letter

Principal Investigator: Tamika La Salle, PhD
Student Investigator: Jesslynn Rocha Neves, M.A.
Study Title: Development of a Development of a School Climate Walkthrough Assessment

INTRODUCTION/WHY IS THIS STUDY BEING DONE?

Your school has agreed to participate in a research study being conducted by a doctoral student from the University of Connecticut. This form will give you the information you will need to understand why this study is being done, and your role in the study. We encourage you to take some time to read about the study and to discuss it with your class. We also encourage you to ask questions now and at any time. This study involves the creation of a walkthrough tool used to assess school climate. A rater from the University of Connecticut will visit your school to complete a walkthrough assessment, and to administer a survey interview to a handful of randomly selected students. Survey analysis of the data provides information that will provide an overall view of student perceptions of school climate among middle school students. The data collected from the survey will be used to identify areas of strength and areas of need for positive school climate efforts.

What are the study procedures? What will I be asked to do?
On the day that the data collector visits the school, you will be asked to distribute neon colored breakaway lanyards to be worn by students so that they are visible to the data collector. Only students who are in the grade selected for the study will receive a lanyard, and students who are ineligible for the study (e.g. parent opt-out form returned, significant speech/intellectual impairment) will wear a purple lanyard so that they will not by selected by the data collector. Please do not tell students the meaning of the blue lanyard. The rater will be observing a designated school area (non-classroom) and observing environmental features, not specific individuals or actions. The rater will select a handful of students at random to answer an 9-item oral survey about their perception of the school climate. We expect each student survey to take about 5 minutes to complete. Students who are wearing and lanyard may be late to class, escorted by a data collector, if a student interview takes longer than the scheduled time.

The survey will be given during non-instructional time. Students will be informed that they may skip any question that they do not want to answer or may discontinue taking the survey at any time.

What are the risks or inconveniences of the study?
We believe there are no known risks to you as a result of this research study. However, a possible inconvenience may be the time it takes to communicate to your students about the study and distribute lanyards.

What are the benefits of the study?
You may not directly benefit from this research. However, we hope that your school's participation may help you and the administrators at your school learn about student perceptions of school climate. In addition, your school's participation in this study will help with the development of a school climate walkthrough tool that can help guide efforts to promote a positive school climate.

WHOM DO I CONTACT IF I HAVE QUESTIONS ABOUT THE STUDY?

I am happy to answer any question you have about this study. If you have questions about your this project, or about your child's participation in this research, you may contact student investigator, Jesslynn Rocha Neves at (774)-202-9252 or jesslynn.neves@uconn.edu.

Appendix E
Parent Information/Opt-Out Form

Parental Notification Form for Participation in a Research Study

Principal Investigator: Tamika La Salle, PhD
Student Investigator: Jesslynn Rocha Neves, M.A.
Study Title: Development of a School Climate Walkthrough Assessment

Introduction

Your child is invited to participate in a research study to contribute to the development of a school climate assessment. Your child is being asked to participate because their school has agreed to participate in a research study being conducted by a doctoral student from the University of Connecticut. This form will give you the information you will need to understand why this study is being done, and what you need to do if you DO NOT want your child to participate. We encourage you to take some time to read about the study and to discuss it with your child. We also encourage you to ask questions now and at any time. If you give your child permission to participate, no further action is required. Your child will automatically be enrolled in the study. If you decide that you DO NOT want your child to participate or if you decide later that you would rather not have your child's data be used in the study, please sign the attached form and return it to your child's teacher by _____.

WHY IS THIS STUDY BEING DONE?

This study involves the creation of a walkthrough tool used to assess school climate. A rater from UConn will visit your child's school to complete a walkthrough, and to interview a handful of students. Students will be selected randomly for an interview, so your child may be asked to answer a few questions about their school. For example, they may be asked if they have a connection with a trusted adult at school.

The data collected from the survey will be used to identify areas of strength and areas of need for your school's positive school climate efforts.

What are the study procedures? What will my child be asked to do?

If you give permission for your child to take part in this study, your child may be selected at random by the visiting rater to answer a 9-item survey. These questions relate to your child's experiences of school climate and safety. Students selected for the interview will also be asked for their grade, race/ethnicity, and gender. No personally identifying information, such as name or student ID, will be collected in this study. Students may skip questions during the survey, and any questions are not answered the data will not be used. We expect the survey to take about 5 minutes to complete.

On the day that the data collector visits the school, teachers will distribute neon colored breakaway lanyards to be worn by students so that they are visible to the data collector. Only students who are in the grade selected for the study will receive a lanyard, and students who returned a signed parent opt-out form will wear a lanyard of a different color so that they are not selected by selected by the data collector. Further, teachers will distribute the different colored

lanyards to students with severe cognitive or language impairment, given that the survey is given orally and intended to be brief. The rater will only select students wearing a lanyard that is a predetermined designated color for interviews.

If you would like to review the survey please use this link to preview the online survey: https://uconn.co1.qualtrics.com/jfe/form/SV_6LRrnOaHMMipZZP

The survey will be given during non-instructional time. Students will be informed that they may skip any question that they do not want to answer or may stop taking the survey at any time.

What are the risks or inconveniences of the study?
We believe there are no known risks to your child because of his/her participation in the research study; however, a possible inconvenience may be the time it takes to complete the study.

What are the benefits of the study?
Your child may not directly benefit from this research. However, we hope that students' participation in the study may help inform their teachers and administrators how students feel about their school. Your child's participation in this study will also help with the development of a school climate walkthrough tool that can guide efforts to promote positive school climate.

Will my child receive payment for participation? Are there costs to participate?
There are no costs to you and your child for participating in this study. Your child will not be paid to participate in this study.

How will my child's information be protected?
The following procedures will be used to protect the confidentiality of the data collected from your child. All students in the participating grade will receive lanyards in a variety of colors to protect the privacy of students who are not participating. ***No individually identifying information will be collected at any time during this study.*** Your child's individual responses will not be reported to any administrators, teachers, or other students. Student responses will receive a numerical code that is not based on any personally identifying information. Each response will be uniquely coded with the school's 2-digit ID number, followed by a sequentially coded 2-digit student number (e.g. Student 3 at School 12 is ID 1203). A master key that links school names and codes will be maintained in a separate and secure location. The master key will be destroyed after 3 years.

The rater will enter student responses through a secure online survey system, Qualtrics, using a tablet/iPad. The Qualtrics account is password protected and can only be accessed by the researchers conducting this study. All electronic files (e.g., database, spreadsheet, etc.) containing study information will be password protected. Any computer hosting such files will also have password protection to prevent access by unauthorized users. Only the members of the research staff will have access to the passwords. Data that will be shared with others will be coded as described above to help protect your child's identity.

At the end of this study, the researchers may publish their findings. Information will be presented in summary format and your child will not be identified in any publications or presentations.

We will do our best to protect the confidentiality of the information we gather from you but we cannot guarantee 100% confidentiality. Your confidentiality will be maintained to the degree allowed by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties.

If, during the course of this research study, a UConn employee suspects that a minor (under the age of 18) has been abused, neglected, or placed at imminent risk of serious harm, it will be reported directly to the Department of Children and Families (DCF) or a law enforcement agency.

You should also know that the UConn Institutional Review Board (IRB) Research Compliance Services may inspect study records as part of its auditing program, but these reviews will only focus on the researchers and not on your child's responses or involvement. The IRB is a group of people who review research studies to protect the rights and welfare of research participants.

Can my child stop being in the study; what are my and my child's rights?

Your child does not have to be in this study if you do not want them to participate. If you give permission for your child to be in the study, but later change your mind, you may withdraw your child at any time. There are no penalties or consequences of any kind if you decide that you do not want your child to participate.

Your child does not have to answer any question that they do not want to answer, and may stop taking the interview if they choose. Students will be informed that they have this right before the student interview.

Your child's relationship with the teacher or the services they receive from their school will not be taken away or changed in any way if you do not want your child to participate, or if your child chooses not to participate.

WHOM DO I CONTACT IF I HAVE QUESTIONS ABOUT THE STUDY?

Take as long as you like before you make a decision. We will be happy to answer any question you have about this study. If you have further questions about this study or if you have a research-related problem, you may contact student investigator, Jesslynn Rocha Neves at (774)-202-9252 or jesslynn.neves@uconn.edu. If you have any questions concerning your child's rights as a research participant, you may contact the University of Connecticut Institutional Review Board (IRB) at 860-486-8802.

Appendix E (contd.)
Parent Information/Opt-Out Form

Parental Refusal Form for Participation in a Research Study

Return slip ONLY if you DO NOT want your child to participate in this study.

Principal Investigator: Tamika La Salle, PhD
Student Investigator: Jesslynn Rocha Neves, M.A.
Study Title: Development of a SCWA

Documentation of Permission:
I have read this form and decided that I **DO NOT** give permission for my child to participate in the study described above. Its general purposes, the particulars of my child's involvement and possible risks and inconveniences have been explained to my satisfaction. My signature also indicates that I have received a copy of this parental permission form.

Please return this form to the child's teacher by _____ if you **DO NOT** want your child to participate in this study.

_____	_____	_____
Student Signature:	Print Name:	Date:
_____	_____	_____
Parent/Guardian Signature:	Print Name:	Date:

Relationship to Student (e.g. mother, father, guardian): _____

_____	_____	_____
Signature of Person Refusing Consent	Print Name:	Date:

Appendix F
Student Information Letter

Principal Investigator: Tamika La Salle, PhD
Student Investigator: Jesslynn Rocha Neves, M.A.
Study Title: Development of a SCWA

INTRODUCTION/WHY IS THIS STUDY BEING DONE?

We want to learn how students how you and other students feel about your school. A visitor from the University of Connecticut will be at your school on _____ to learn about your school environment. The visitor will also randomly select students to answer a few questions about their school. For example, if you were chosen, you may be asked if you have a connection to a trusted adult at school. There are no right or wrong answers—this is not a test! We just want to know how you feel. Your responses will give us important information to help your school become even better.

What will i be asked to do?
You may be approached by a rater to answer some questions about how you feel about your school. As you answer the questions, try to focus on your own experiences at school.

If you are selected for an interview, you may skip any question you do not want to answer. You can stop taking the survey at any time. All of your responses are completely anonymous; your answers will not be shared with your teachers, principal, family or peers. It takes about 5 minutes to answer the interview questions.

What if my parent has returned an opt-out form?
If your family does not want you to participate, they must return a signed opt-out form that was sent to them. On the day that the data collector visits the school, teachers will distribute neon colored breakaway lanyards to students who are in the grade selected for the study. If your parent/guardian signed an opt-out form, you will receive a lanyard but **will not** be selected for an interview. If your parent did not return an opt-out form, but you **do not** want to participate, you can choose not to wear the lanyard so that you are not selected for an interview.

Do I have to be in the study?
You do not have to agree to complete the interview if approached by the visitor. If you decide to answer the visitor's questions, but later change your mind, you can stop at any time. There are no consequences of any kind if you decide that you DO NOT want to participate.

WHO CAN I ASK IF HAVE QUESTIONS ABOUT THE STUDY?

If you have questions about this research study, feel free to ask your parent/guardian or teacher for more information, or how to contact the researchers.

Thank you!

Appendix G
School Climate Walkthrough Assessment (SCWA) Administration Protocol

The SCWA is a school climate assessment tool that was developed to be used in conjunction with the Georgia Elementary School Climate Survey (GESCS), particularly for intermittent monitoring between GESCS administrations. The SCWA is intended to be administered by a rater who is not part of the target school community. It is administered using a table through the Qualtrics survey application. Qualtrics ensures secure offline administration of the walkthrough tool.

SCWA Components
- Data collector demographic questions
- Environmental Observation
- Student Interview

Please follow along using your tablet as we move through the demonstration.

	Procedure	**Notes**
Data Collector Demographic Questions	1. Complete this immediately before beginning the observation by opening the tablet and selecting the Qualtrics offline app > SCWA 2. Select the school name 3. Select the number of data collectors at this school	- The number of data collectors includes you
Environmental Observation (EO)	1. Click next to item 1. Walk around the entire designated area for 1 minute, observing for related examples 2. Use listed examples and non-examples as a guide 3. Mark the number of examples observed 4. Write in observed examples that are not on the list but you believe are related 5. Complete this sequence for all items 6. You will be asked about positive interactions observed intermittently and at the end of the survey. Please be mindful of this as you complete the EO.	- The designated area will vary by school and will be confirmed at site. - Boundaries will be confirmed before administration - Do not go backwards in the administration if you notice an example from a previous item later
Random Selection of Students	1. Upon completion of the EO, move to the designated area with eligible students (e.g. lunch room, playground) 2. Identify an eligible student 3. Approach the student and recite the following script: **Data Collector:** I want to ask you a few questions about your school to help all members of the school understand how you feel about your school, and make your school even better. There are no right or wrong answers—this is not a test! I just want to know how you feel. Do you understand? (Student Response)	- Eligible students wearing colored lanyards - Students with purple lanyard ineligible - Select students who are not in the same friend group - Select students with diverse presentation in terms of gender, clothing, and appearance

	Data Collector: Would you like to answer a few questions about your school? (Student Response) **Data Collector:** Okay. You can stop answering the questions at any time if you change your mind. 4. If a student declines, say, "Thank you for your time" and select another student. 5. Acceptable consent responses include a nod or verbal agreement	
Student Interview	1. Turn tablet to student and allow them to tap responses to demographic questions 2. Turn the table back to you when the student is done 3. Verify that the student has checked grade 4 4. Progress through each 5. Repeat each item as often as necessary	- Respond to questions about demographics with examples (e.g. some students who speak Spanish at home are Latinx; Some people are American and also from another country) - If a student gives irrelevant examples, do not count those examples. - If a student has trouble thinking of a response, give one example.
Student Disqualifiers	1. A student is not wearing any lanyard 2. A student is not wearing a purple lanyard 3. A student is not in 4th grade 4. A student does not provide clear, coherent, audible responses 5. A student waits longer than 10 seconds to respond to the first and second interview items	
Data Management	1. Upon completion of the SCWA, close the window and cover the tablet using its case. 2. When a stable internet connection is available, immediately upload the data by going into the Qualitrcs Offline app > SCWA > Upload Responses 3. Responses will automatically be removed from the tablet/app and uploaded to the secure data system 4. Notify the student investigator that you have uploaded responses immediately via text, email, or phone	-Do not allow data to be stored on the tablet for more than 24 hours

Appendix H:
Environmental Observation Scale Descriptive Statistics

Mean Ratings

Item Ratings	Mean (M)	Standard Deviation (SD)
1. Emblems of school pride are visible.	2.48	1.20
2. Physical environment is conducive to school safety.	2.91	.80
3. Safety resources are clearly visible in separate locations.	3.22	.80
4. Student academic work/evidence of student achievement is displayed.	3.78	.60
5. School leadership, such as principals and administrators, are visible.	1.52	.67
6. THROUGHOUT THE ENTIRE ENVIRONMENTAL OBSERVATION, how many positive interactions did you observe? - Educators (e.g. principals, teachers, school staff) initiate positive interactions with students.	1.74	.54

Correlations Among Items

	1	2	3	4	5	6
1. Emblems of school pride are visible.	-	-.01	-.32*	-.20*	-.11	-.10
2. Physical environment is conducive to school safety.			.31**	.27**	-.29**	.39**
3. Safety resources are clearly visible in separate locations.				.43**	-.40*	.63*
4. Student academic work/evidence of student achievement is displayed.					-.27**	.51**
5. School leadership, such as principals and administrators, are visible.						-.37**
6. Educators positive interactions with students (throughout entire observation)						-

**significant at .05 level **significant at .01 level*